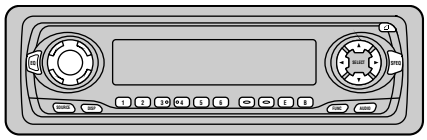
Service Manual

DEH-P730/X1N/UC



ORDER NO.
CRT2650

MULTI-CD/DAB CONTROL HIGH POWER CD PLAYER WITH FM/AM TUNER

DEH-P730 X1N/UC

DEH-P7300 X1N/UC

COMPACT disc DIGITAL AUDIO

● This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech. Module	Remarks
CX-977	CRT2624	S9	CD Mech. Module:Circuit Description, Mech.Description, Disassembly

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PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER EUROPE NV Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

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K-ZZD. FEB. 2001 Printed in Japan

● **CD Player Service Precautions**

1. For pickup unit(CXX1480) handling, please refer to"Disassembly"(see page 49).
   During replacement, handling precautions shall be taken to prevent an electrostatic discharge(protection by a jumper-solder).
2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.
3. Please checking the grating after changing the service pickup unit(see page 43).

1. SAFETY INFORMATION

CAUTION

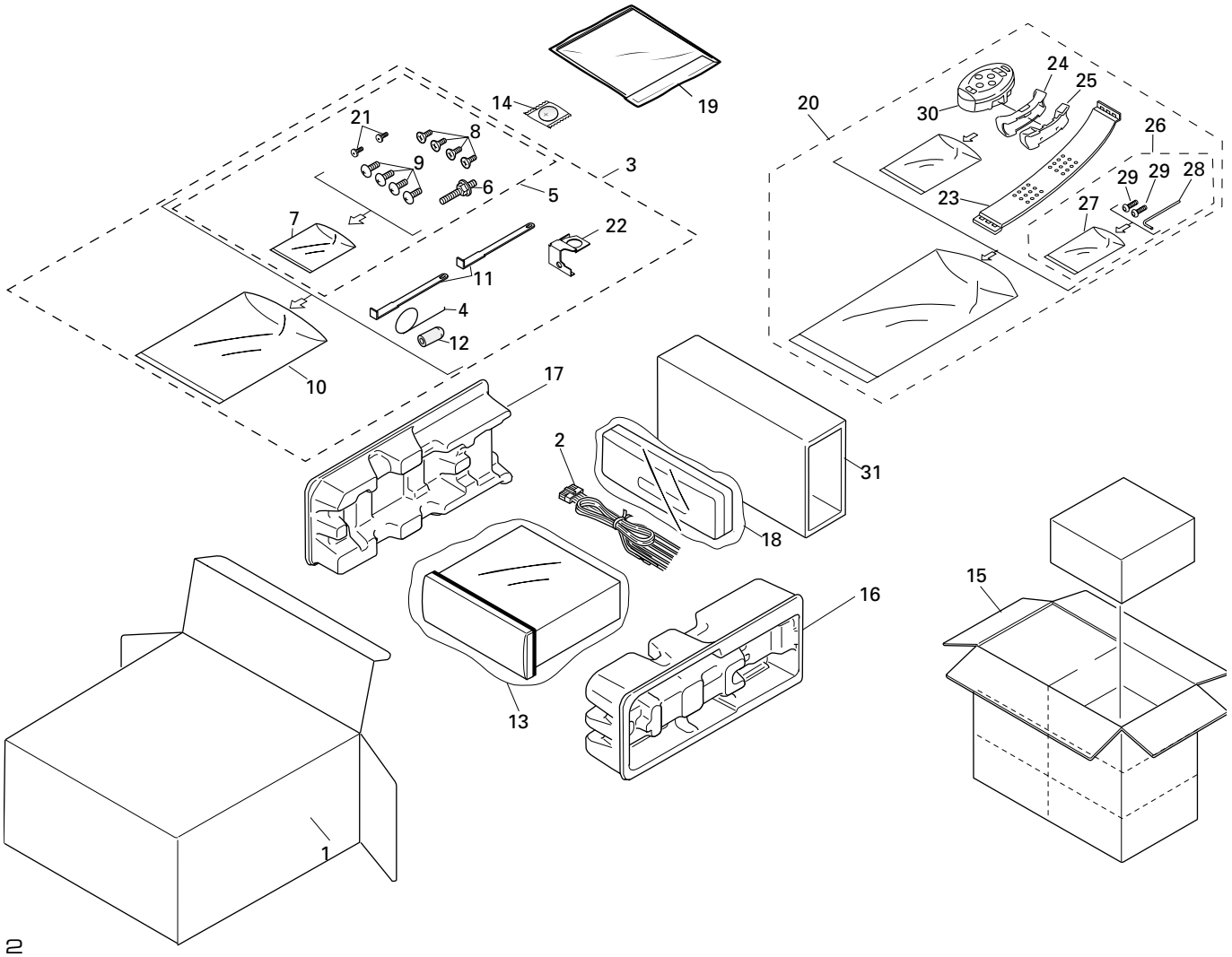
This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING(DEH-P730/X1N/UC)



NOTE:

● Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.

● Screws adjacent to ∇ mark on the product are used for disassembly.

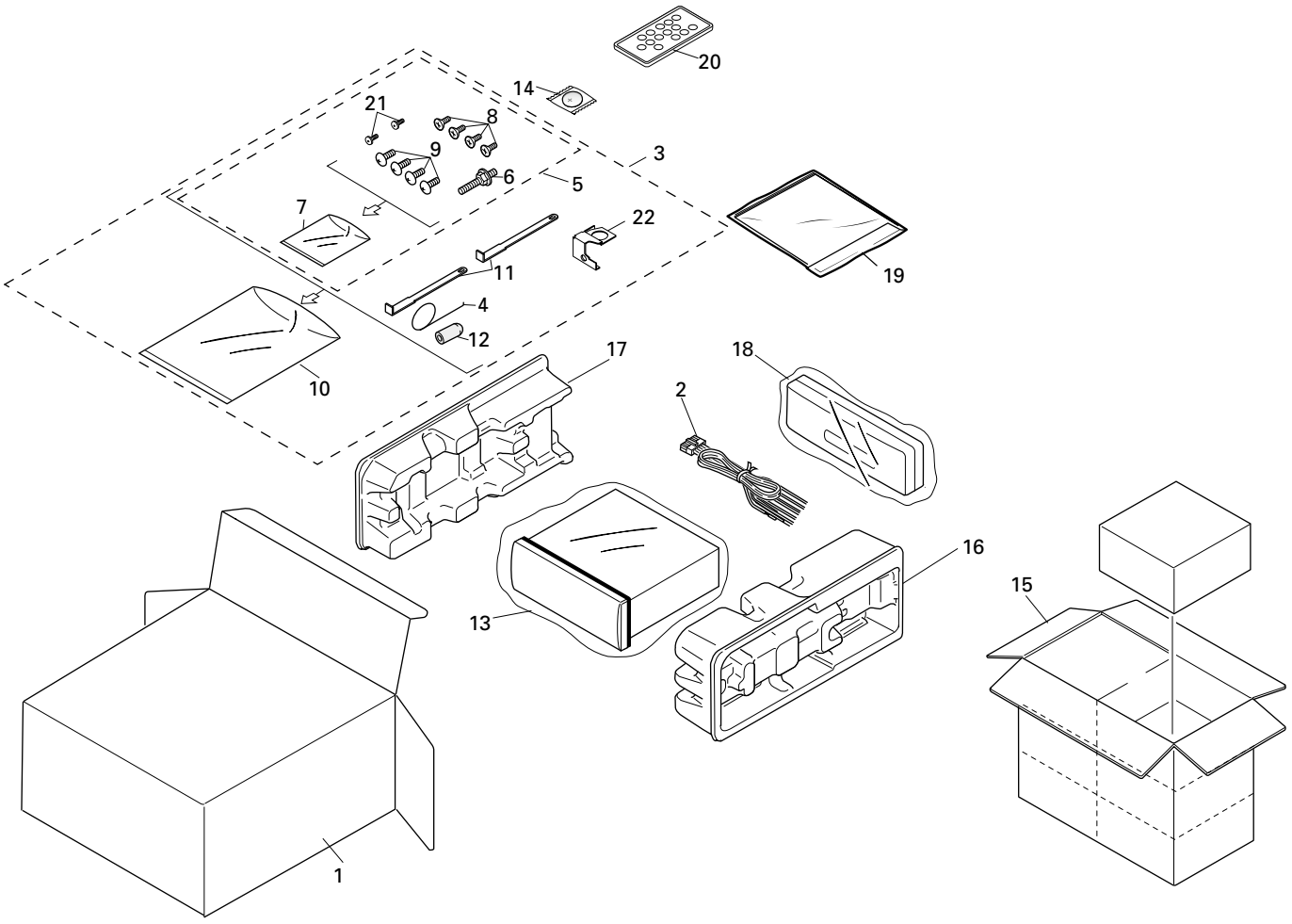
● PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Carton	CHG4328
	2	Cord Assy	CDE6438
	3	Accessory Assy	CEA2773
	4	Spring	CBH1650
	5	Screw Assy	CEA2796
	6	Screw	CBA1002
*	7	Polyethylene Bag	CEG-127
	8	Screw	CRZ50P090FMC
	9	Screw	TRZ50P080FMC
*	10	Polyethylene Bag	CEG-158
	11	Handle	CNC5395
	12	Bush	CNV3930
	13	Polyethylene Bag	CEG1301
*	14	Battery	CEX1065
	15	Contain Box	CHL4328
	16	Protector	CHP2252
	17	Protector	CHP2251
	18	Case Assy	CXB3520
	19-1	Polyethylene Bag	CEG1116
	19-2	Owner's Manual	CRD3384
	19-3	Installation Manual	CRD3385
*	19-4	Caution Card	CRP1207
*	19-5	Warranty Card	CRY1070
*	19-6	Caution Card	CRP1220
	20	Remote Control Assy	CXB6860
	21	Screw	BPZ20P060FZK
	22	Earth Plate	CNC9450
	23	Belt	CZN7661
	24	Holder Assy	CZX3172
	25	Holder Assy	CZX3173
	26	Screw Assy	CZE3169
*	27	Polyethylene Bag	CEG-127
*	28	Hexagonal Wrench	CZE3176
*	29	Screw	RMZ30H060FBK
	30	Remote Control Assy	CZX3246
	31	Inner Box	CHW1754

● Owner's Manual, Installation Manual

Model	Part No.	Language
DEH-P730/X1N/UC	CRD3384	English, French
	CRD3385	English, French

2.2 PACKING(DEH-P7300/X1N/UC)



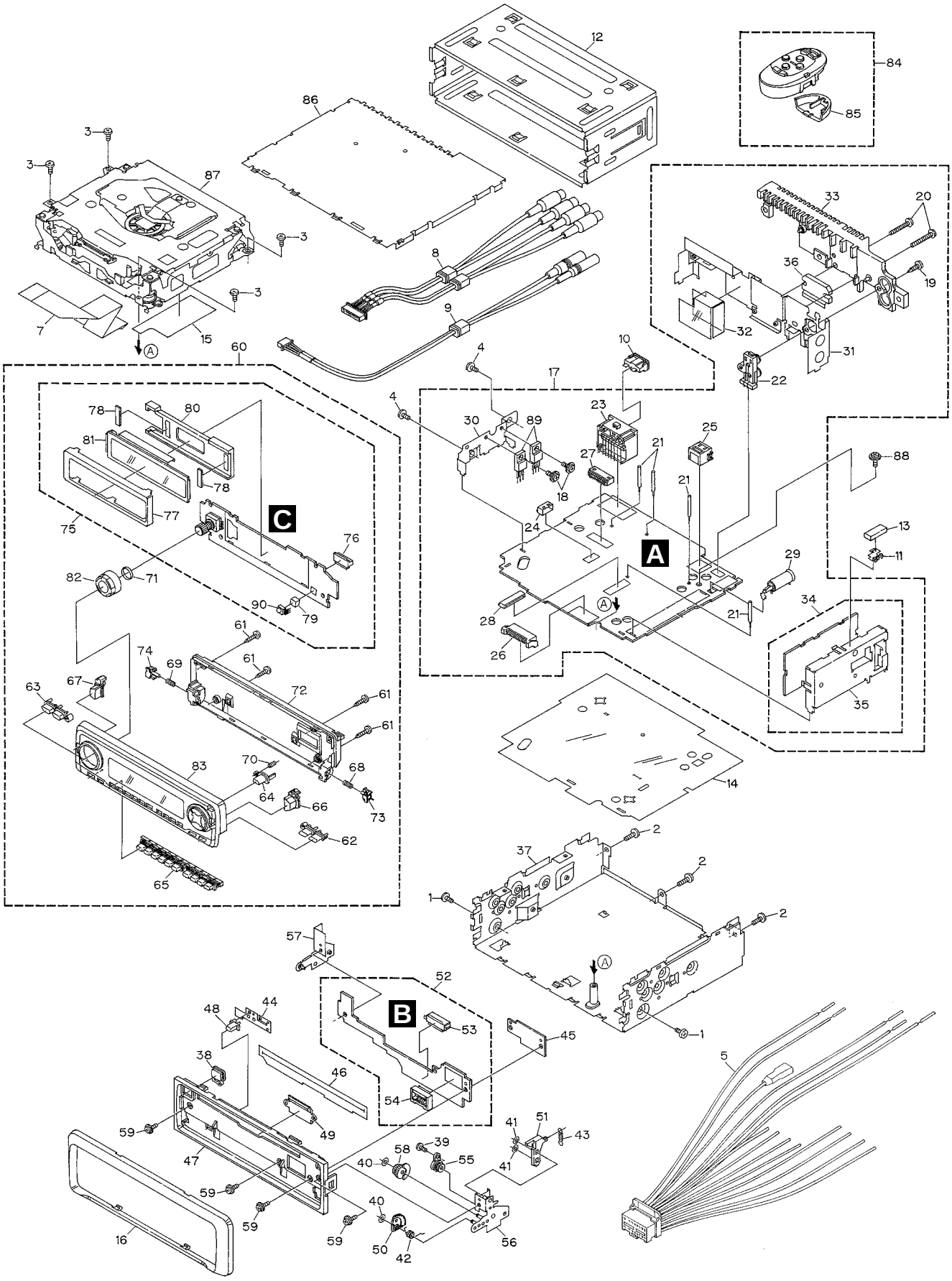
● PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Carton	CHG4327
	2	Cord Assy	CDE6438
	3	Accessory Assy	CEA2773
	4	Spring	CBH1650
	5	Screw Assy	CEA2796
	6	Screw	CBA1002
*	7	Polyethylene Bag	CEG-127
	8	Screw	CRZ50P090FMC
	9	Screw	TRZ50P080FMC
*	10	Polyethylene Bag	CEG-158
	11	Handle	CNC5395
	12	Bush	CNV3930
	13	Polyethylene Bag	CEG1301
*	14	Battery	CEX1065
	15	Contain Box	CHL4327
	16	Protector	CHP2252
	17	Protector	CHP2251
	18	Case Assy	CXB3520
	19-1	Polyethylene Bag	CEG1116
	19-2	Owner's Manual	CRD3382
	19-3	Installation Manual	CRD3383
*	19-4	Card	ARY1048
*	19-5	Caution Card	CRP1207
*	19-6	Caution Card	CRP1220
	20	Remote Control Unit	CXB6797
	21	Screw	BPZ20P060FZK
	22	Earth Plate	CNC9450

● Owner's Manual, Installation Manual

Model	Part No.	Language
DEH-P7300/X1N/UC	CRD3382	English, French
	CRD3383	English, French

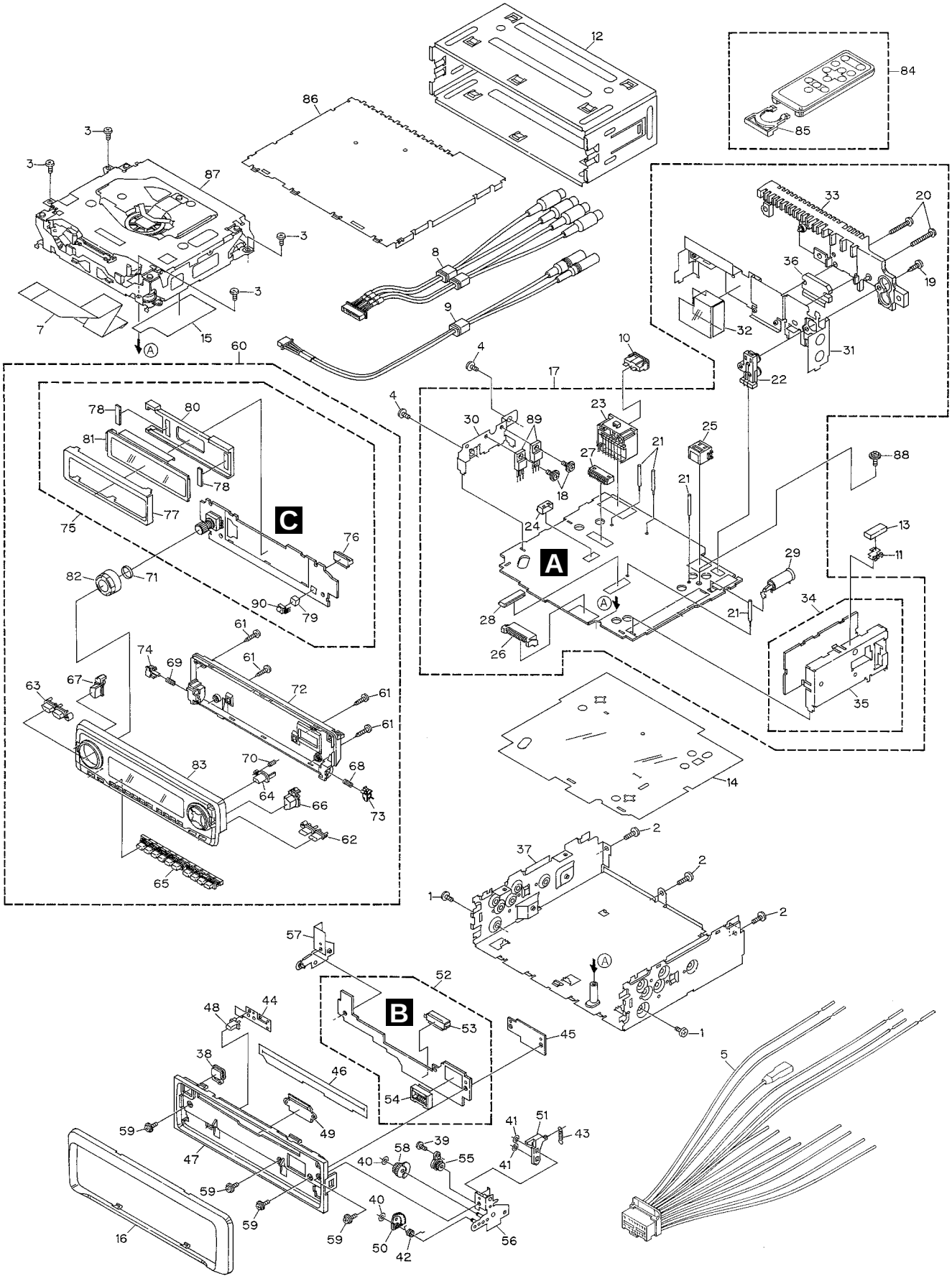
2.3 EXTERIOR(DEH-P730/X1N/UC)



● EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BMZ30P040FZK
	2	Screw	BMZ30P100FMC
	3	Screw	BSZ26P060FMC
	4	Screw	BSZ30P040FMC
	5	Cord Assy	CDE6438
	6	•••••	
	7	Cable	CDE6451
	8	Cord Assy	CDE6453
	9	Cord Assy	CDE6455
	10	Fuse(10A)	CEK1136
	11	Holder	CNC5704
	12	Holder	CNC8659
	13	Cushion	CNM4870
	14	Insulator	CNM6948
	15	Insulator	CNM7214
	16	Panel	CNS6552
	17	Tuner Amp Unit	CWM7452
	18	Screw	ASZ26P060FMC
	19	Screw	BPZ26P120FMC
	20	Screw	BSZ26P160FMC
	21	Clamper	CEF1007
	22	Pin Jack(CN351)	CKB1035
	23	Plug(CN901)	CKM1330
*	24	Plug(CN451)	CKS1052
	25	Connector(CN101)	CKS3408
	26	Plug(CN801)	CKS3537
	27	Connector(CN352)	CKS3602
	28	Connector(CN653)	CKS3835
	29	Antenna Jack(CN401)	CKX1056
	30	Holder	CNC8615
	31	Holder	CNC9468
	32	Insulator	CNM6949
	33	Heat Sink	CNR1583
	34	FM/AM Tuner Unit	CWE1563
	35	Holder	CNC8815
	36	IC(IC301)	PAL006A
	37	Chassis Unit	CXB6100
	38	Button(EJECT)	CAC6839
	39	Screw(M2x2)	CBA1176
	40	Washer	CBF1038
	41	Washer	CBF1039
	42	Spring	CBH2428
	43	Spring	CBH2429
	44	Spring	CBL1512
	45	Holder	CNC9096
	46	Cover	CNM6854
	47	Panel	CNS6278
	48	Pin	CNV6486
	49	Lighting Conductor	CNV6487
	50	Gear	CNV6507
	51	Arm	CNV6508
	52	Panel Unit	CWM7375
	53	Socket(CN1950)	CKS3550
	54	Connector(CN1951)	CKS4206
	55	Damper Unit	CXB5070
	56	Holder Unit	CXB6356
	57	Holder Unit	CXB6357
	58	Clutch Unit	CXB6358
	59	Screw	IMS20P045FZK
	60	Detach Grille Assy	CXB6533
	61	Screw	BPZ20P100FZK
	62	Button(FUNC AUDIO)	CAC6776
	63	Button(SOURCE DISP)	CAC6777
	64	Button(OPEN)	CAC6780
	65	Button(1-6)	CAC6841
	66	Button(SFEQ)	CAC6842
	67	Button(EQ)	CAC6840
	68	Spring	CBH2430
	69	Spring	CBH2431
	70	Spring	CBH2491
	71	Spring	CBL1470
	72	Cover	CNS6282
	73	Holder	CNV6505
	74	Holder	CNV6506
	75	Keyboard Unit	CWM7808
	76	Connector(CN1901)	CKS4524
	77	Holder	CNC9112
	78	Cushion	CNM6633
	79	Cushion	CNM7469
	80	Holder	CNV6105
	81	OEL Unit	MXS8016
	82	Knob Unit	CXB7239
	83	Sub Grille Assy	CXB7247
	84	Remote Control Assy	CZX3246
	85	Cover	CZN7655
	86	Case Unit	CXB7482
	87	CD Mechanism Module(S9)	CXK5500
	88	Screw	ISS26P055FUC
	89	Transistor(Q921,998)	2SD2396
	90	IC(IC1903)	TSOP1840SB1

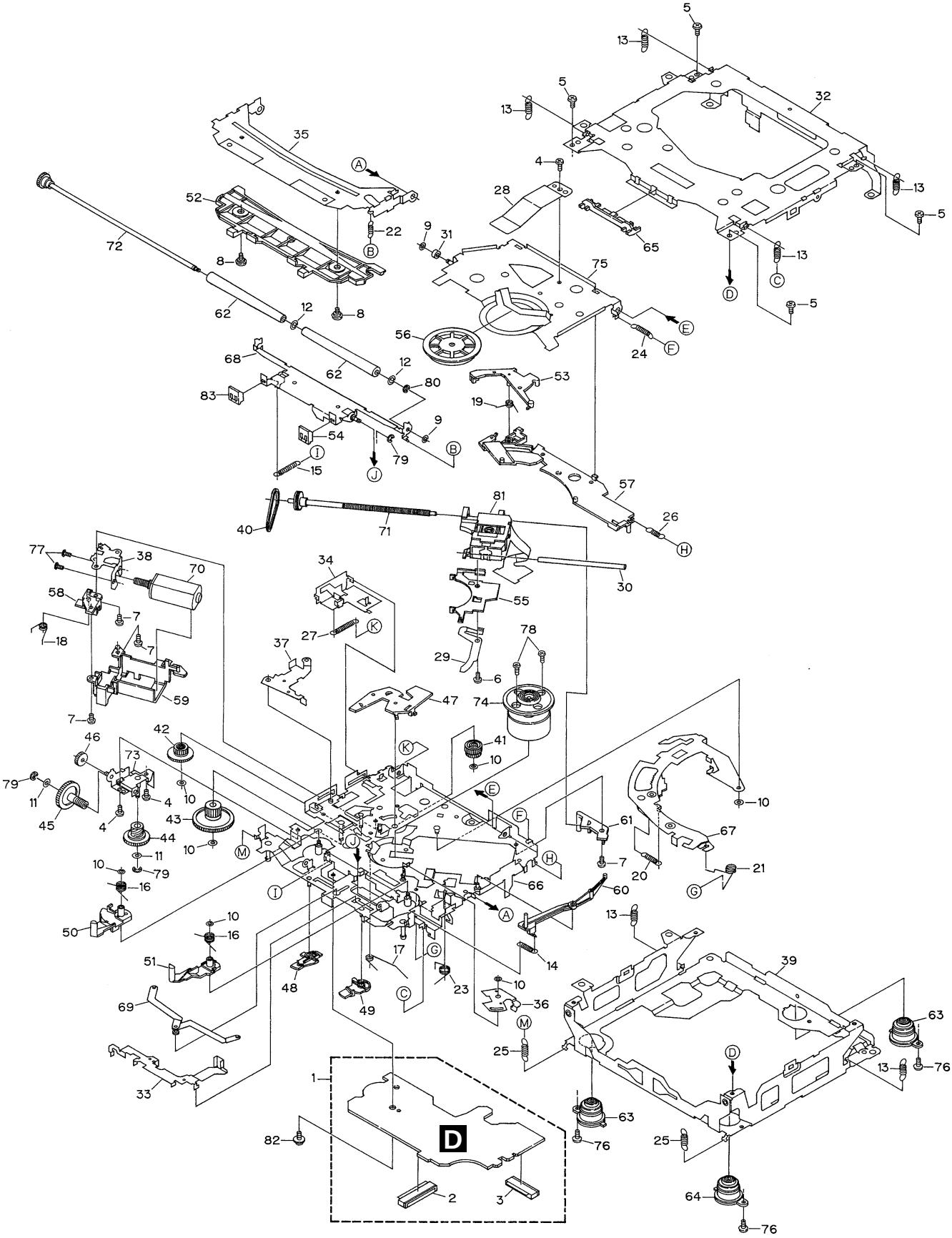
2.4 EXTERIOR(DEH-P7300/X1N/UC)



● EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BMZ30P040FZK
	2	Screw	BMZ30P100FMC
	3	Screw	BSZ26P060FMC
	4	Screw	BSZ30P040FMC
	5	Cord Assy	CDE6438
	6	•••••	
	7	Cable	CDE6451
	8	Cord Assy	CDE6453
	9	Cord Assy	CDE6455
	10	Fuse(10A)	CEK1136
	11	Holder	CNC5704
	12	Holder	CNC8659
	13	Cushion	CNM4870
	14	Insulator	CNM6948
	15	Insulator	CNM7214
	16	Panel	CNS6552
	17	Tuner Amp Unit	CWM7453
	18	Screw	ASZ26P060FMC
	19	Screw	BPZ26P120FMC
	20	Screw	BSZ26P160FMC
	21	Clamper	CEF1007
	22	Pin Jack(CN351)	CKB1035
	23	Plug(CN901)	CKM1330
*	24	Plug(CN451)	CKS1052
	25	Connector(CN101)	CKS3408
	26	Plug(CN801)	CKS3537
	27	Connector(CN352)	CKS3602
	28	Connector(CN653)	CKS3835
	29	Antenna Jack(CN401)	CKX1056
	30	Holder	CNC8615
	31	Holder	CNC9468
	32	Insulator	CNM6949
	33	Heat Sink	CNR1583
	34	FM/AM Tuner Unit	CWE1563
	35	Holder	CNC8815
	36	IC(IC301)	PAL006A
	37	Chassis Unit	CXB6100
	38	Button(EJECT)	CAC6839
	39	Screw(M2x2)	CBA1176
	40	Washer	CBF1038
	41	Washer	CBF1039
	42	Spring	CBH2428
	43	Spring	CBH2429
	44	Spring	CBL1512
	45	Holder	CNC9096
	46	Cover	CNM6854
	47	Panel	CNS6278
	48	Pin	CNV6486
	49	Lighting Conductor	CNV6487
	50	Gear	CNV6507
	51	Arm	CNV6508
	52	Panel Unit	CWM7375
	53	Socket(CN1950)	CKS3550
	54	Connector(CN1951)	CKS4206
	55	Damper Unit	CXB5070
	56	Holder Unit	CXB6356
	57	Holder Unit	CXB6357
	58	Clutch Unit	CXB6358
	59	Screw	IMS20P045FZK
	60	Detach Grille Assy	CXB6534
	61	Screw	BPZ20P100FZK
	62	Button(FUNC AUDIO)	CAC6776
	63	Button(SOURCE DISP)	CAC6777
	64	Button(OPEN)	CAC6780
	65	Button(1-6)	CAC6841
	66	Button(SFEQ)	CAC6842
	67	Button(EQ)	CAC6840
	68	Spring	CBH2430
	69	Spring	CBH2431
	70	Spring	CBH2491
	71	Spring	CBL1470
	72	Cover	CNS6282
	73	Holder	CNV6505
	74	Holder	CNV6506
	75	Keyboard Unit	CWM7467
	76	Connector(CN1901)	CKS4524
	77	Holder	CNC9112
	78	Cushion	CNM6633
	79	Cushion	CNM7469
	80	Holder	CNV6105
	81	OEL Unit	MXS8016
	82	Knob Unit	CXB7239
	83	Sub Grille Assy	CXB7245
	84	Remote Control Unit	CXB6797
	85	Cover	CNS6439
	86	Case Unit	CXB7482
	87	CD Mechanism Module(S9)	CXK5500
	88	Screw	ISS26P055FUC
	89	Transistor(Q921,998)	2SD2396
	90	IC(IC1903)	TSOP1840SB1

2.5 CD MECHANISM MODULE

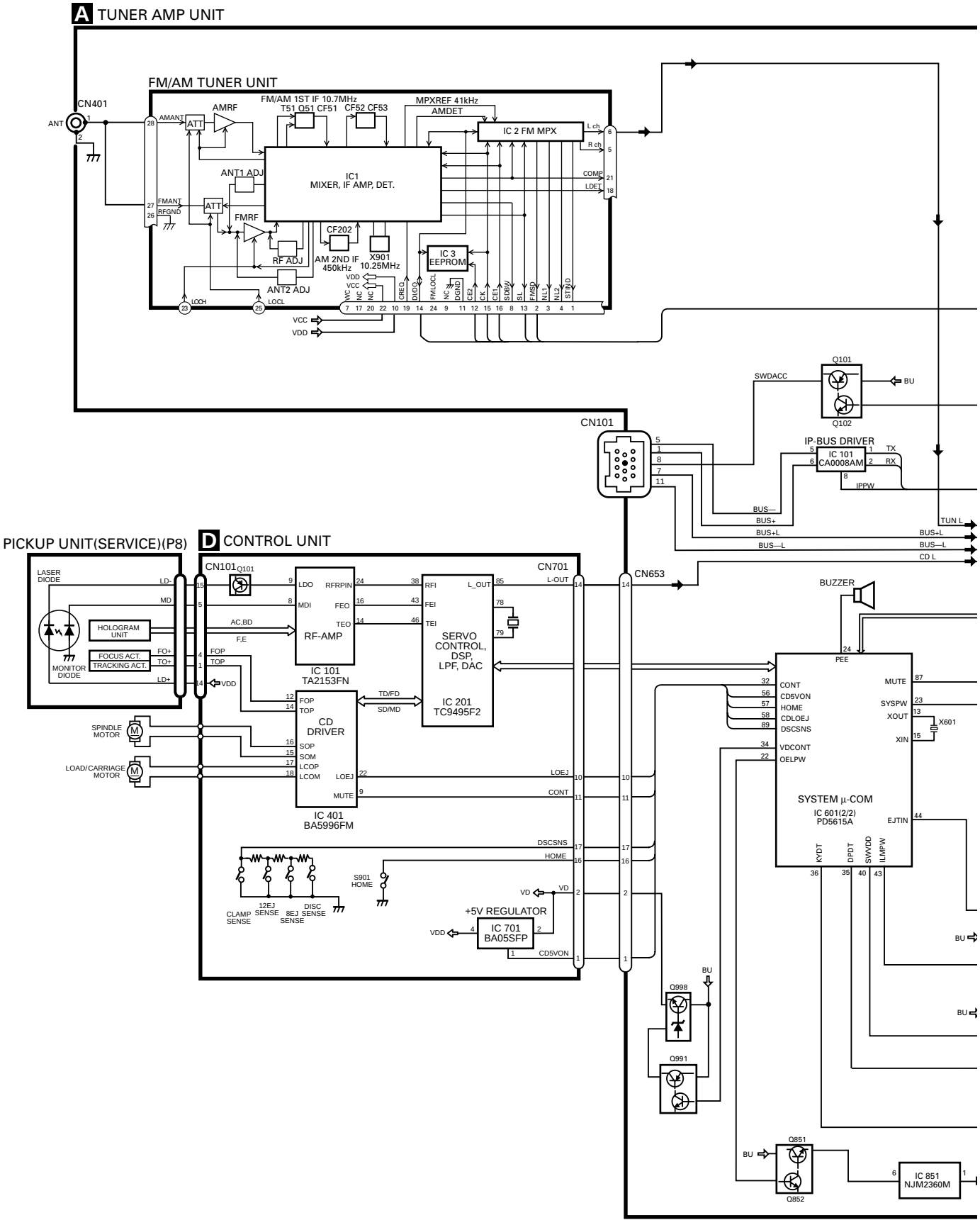


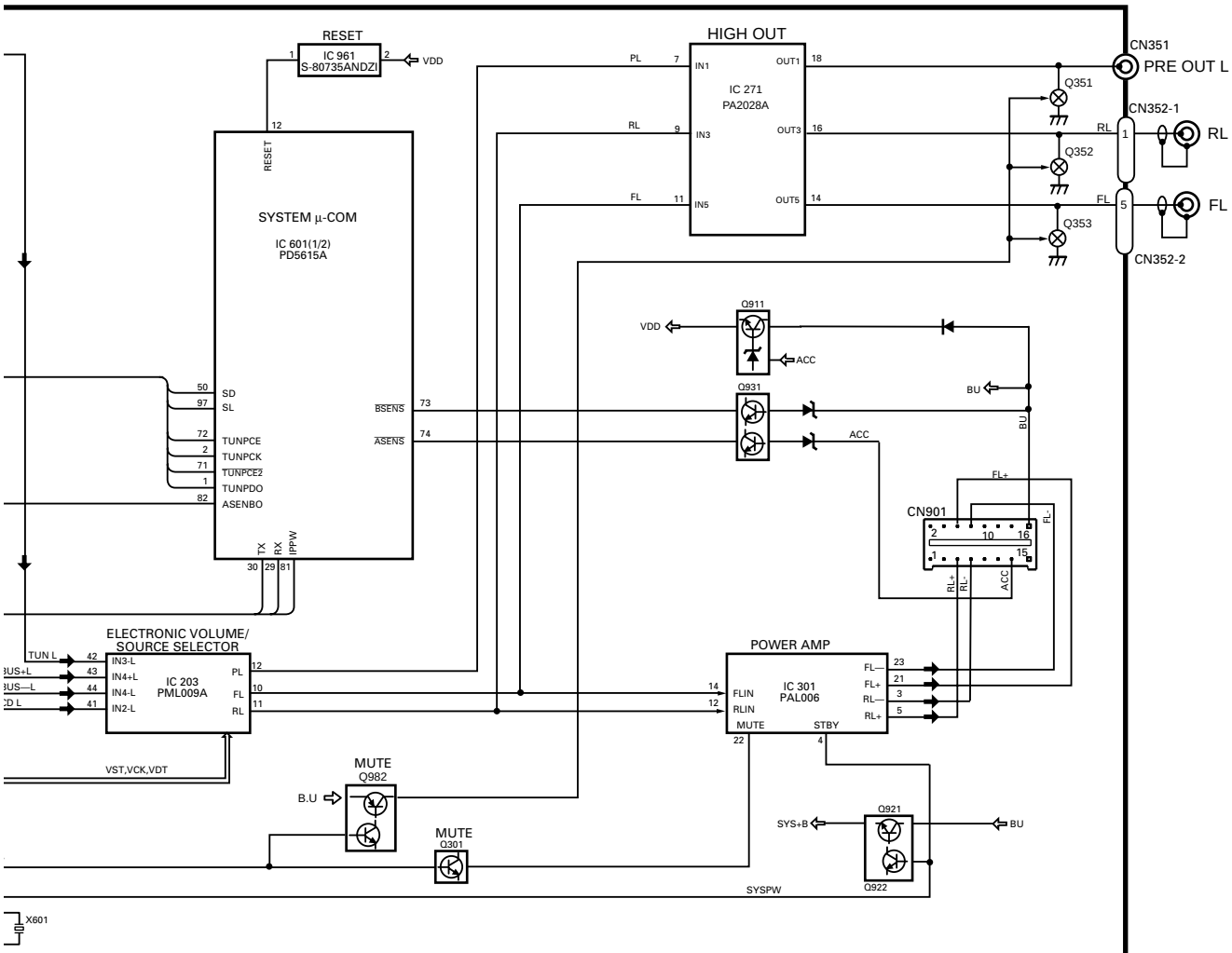
● CD MECHANISM MODULE SECTION PARTS LIST

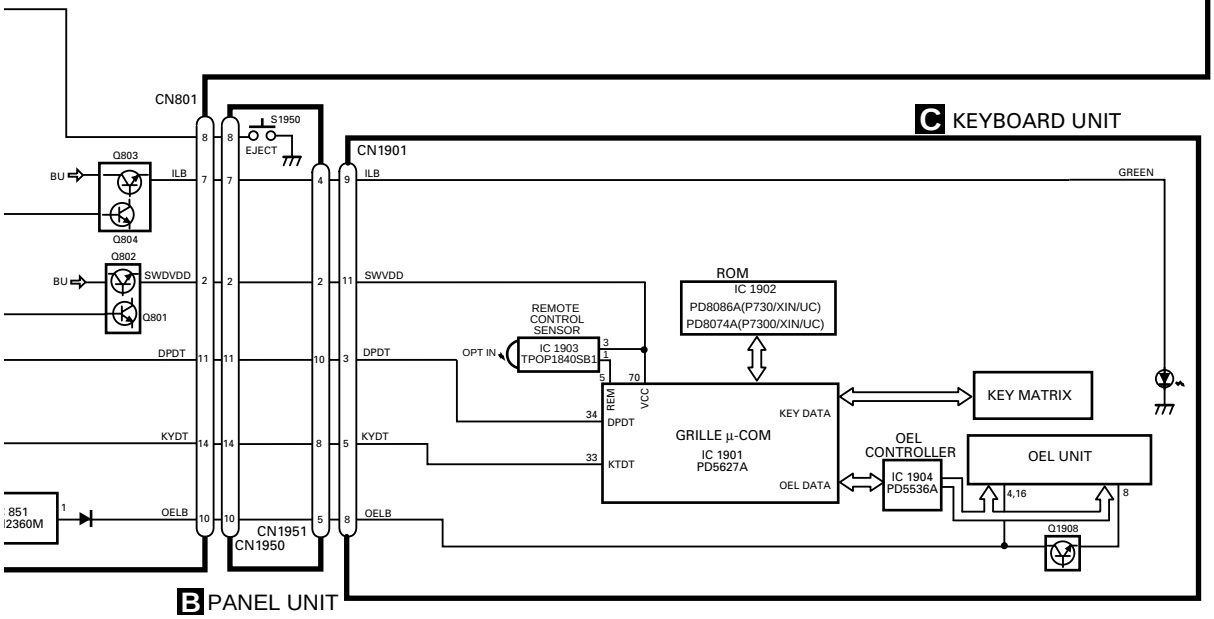
Mark No.	Description	Part No.
1	Control Unit	CWX2481
2	Connector(CN701)	CKS1959
3	Connector(CN101)	CKS3486
4	Screw	BMZ20P025FMC
5	Screw	BSZ20P040FMC
6	Screw(M2x4)	CBA1362
7	Screw(M2x3)	CBA1527
8	Screw	CBA1545
9	Washer	CBF1037
10	Washer	CBF1038
11	Washer	CBF1039
12	Washer	CBF1060
13	Spring	CBH2378
14	Spring	CBH2379
15	Spring	CBH2380
16	Spring	CBH2381
17	Spring	CBH2382
18	Spring	CBH2383
19	Spring	CBH2384
20	Spring	CBH2385
21	Spring	CBH2386
22	Spring	CBH2387
23	Spring	CBH2390
24	Spring	CBH2391
25	Spring	CBH2392
26	Spring	CBH2426
27	Spring	CBH2444
28	Spring	CBL1494
29	Spring	CBL1495
30	Shaft	CLA3845
31	Roller	CLA3910
32	Frame	CNC8946
33	Lever	CNC8948
34	Lever	CNC8949
35	Arm	CNC8951
36	Arm	CNC9016
37	Arm	CNC9017
38	Bracket	CNC9123
39	Frame	CNC9263
40	Belt	CNT1086
41	Gear	CNV6315
42	Gear	CNV6316
43	Gear	CNV6317
44	Gear	CNV6318
45	Gear	CNV6319
46	Gear	CNV6320
47	Arm	CNV6322
48	Arm	CNV6323
49	Arm	CNV6324
50	Arm	CNV6325
51	Arm	CNV6326
52	Guide	CNV6327
53	Arm	CNV6328
54	Guide	CNV6329
55	Rack	CNV6330
56	Clamper	CNV6331
57	Arm	CNV6332
58	Guide	CNV6333
59	Cover	CNV6334
60	Arm	CNV6335
61	Guide	CNV6336
62	Roller	CNV6338
63	Damper	CNV6339
64	Damper	CNV6340
65	Guide	CNV6484
66	Chassis Unit	CXB5898
67	Arm Unit	CXB5899
68	Arm Unit	CXB5900
69	Arm Unit	CXB5901
70	Motor Unit(M2)	CXB5903
71	Screw Unit	CXB5904
72	Gear Unit	CXB5905
73	Bracket Unit	CXB6006
74	Motor Unit(M1)	CXB6007
75	Arm Unit	CXB6237
76	Screw(M2x5)	EBA1028
77	Screw	JFZ20P020FMC
78	Screw	JGZ17P020FZK
79	Washer	YE15FUC
80	Washer	YE20FUC
81	Pickup Unit(Service)(P9)	CXX1480
82	Screw	IMS26P030FMC
83	Guide	CNV6832

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

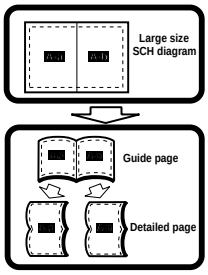



RESET
IC 961
S-80735ANDZI
VDD
SYSTEM μ-COM
IC 601(1/2)
PD5615A
SD
SL
TUNPCE
TUNPCK
TUNPCE2
TUNPDO
ASENBO
BSENS
ASENS
TX
RX
IPPW
HIGH OUT
IC 271
PA2028A
PL
RL
FL
CN351
PRE OUT L
CN352-1
CN352-2
Q351
Q352
Q353
Q911
Q931
ACC
BU
CN901
ELECTRONIC VOLUME/
SOURCE SELECTOR
IC 203
PML009A
TUN L
VST,VCK,VDT
POWER AMP
IC 301
PAL006
FLIN
RLIN
MUTE
STBY
MUTE
Q982
B.U
MUTE
Q301
Q921
Q922
SYS+B
SYSPW
X601

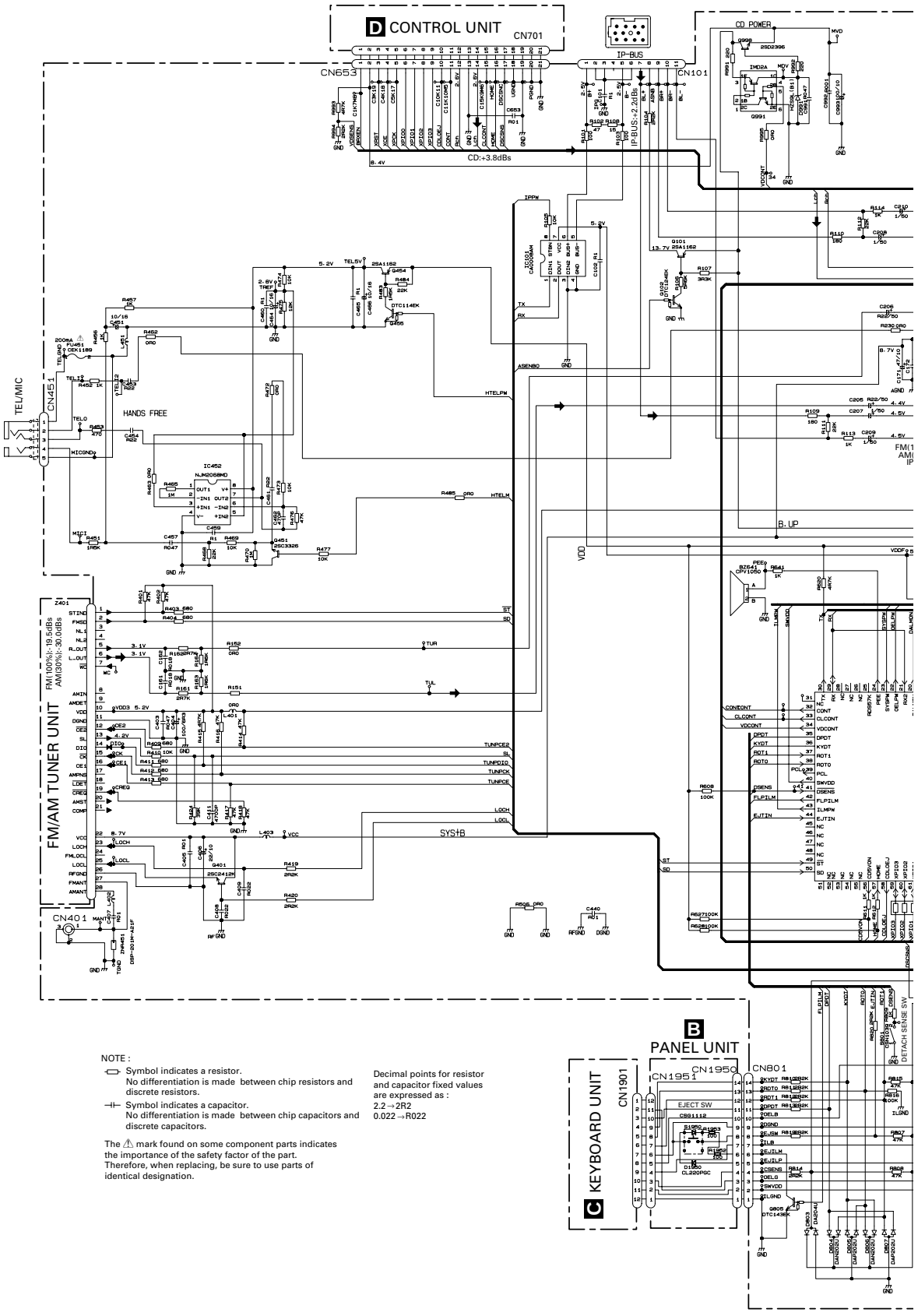

CN801
S1950
EJECT
CN1901
C KEYBOARD UNIT
Q803
Q804
Q802
Q801
BU
ILB
SWDVDD
DPDT
KYDT
OELB
CN1951
CN1950
B PANEL UNIT
GREEN
SWVDD
ROM
IC 1902
PD8086A(P730/XIN/UC)
PD8074A(P730/XIN/UC)
REMOTE
CONTROL
SENSOR
IC 1903
TPOP1840SB1
OPT IN
GRILLE μ-COM
IC 1901
PD5627A
REM
VCC
KEY DATA
OEL DATA
KEY MATRIX
OEL
CONTROLLER
IC 1904
PD5536A
OEL UNIT
Q1908

3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



A-a



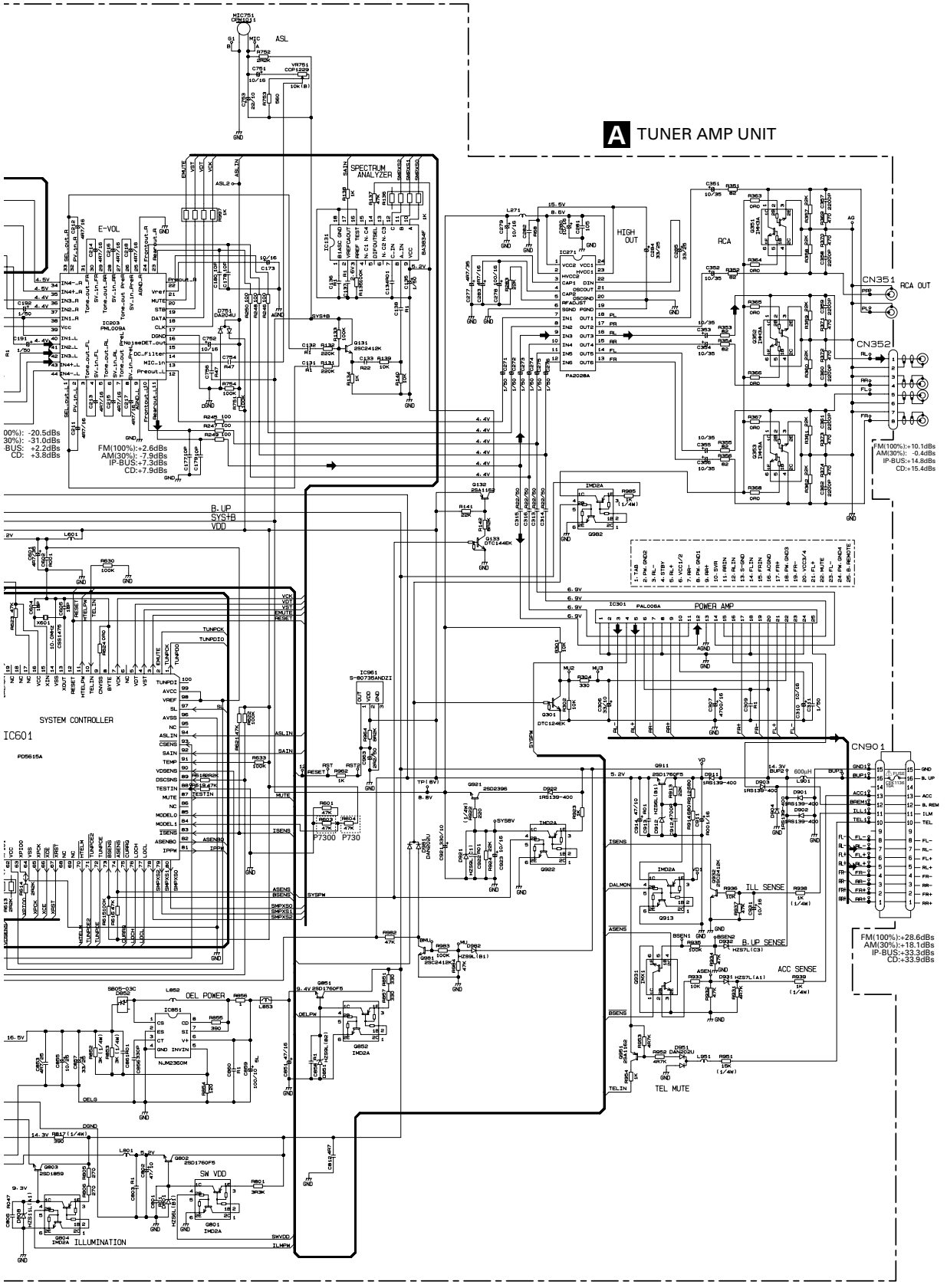
NOTE :

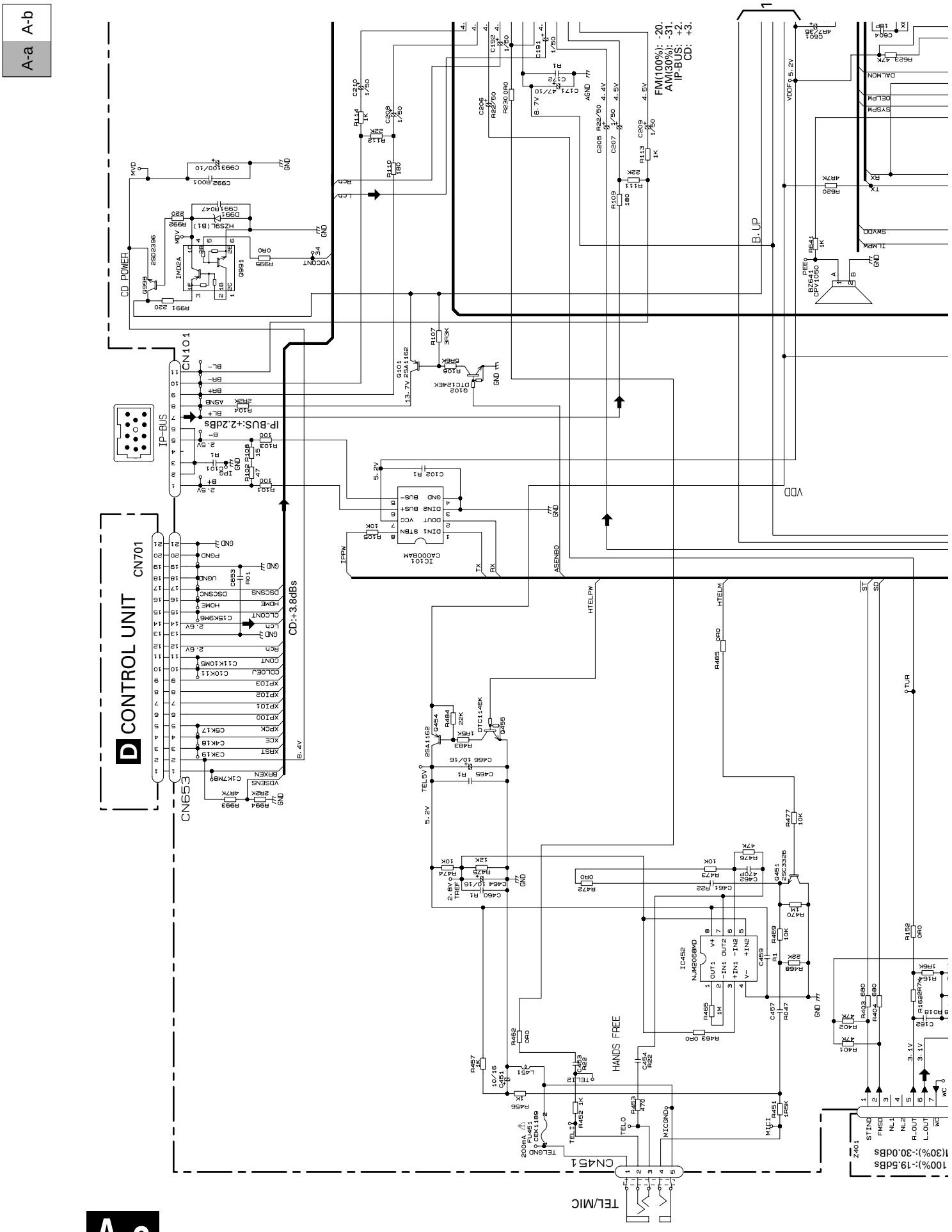
- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022

A-b


A TUNER AMP UNIT
SYSTEM CONTROLLER
IC601
POWER AMP
IC301
SPECTRUM ANALYZER
E-VOL
HIGH OUT
RCA
CN351
RCA OUT
CN352
CN901
ILLUMINATION
TEL MUTE
ACC SENSE
B-UP SENSE
ILL SENSE
P7300 P730


A-b
A-a
CD POWER
CONTROL UNIT
CN701
CN653
CN1001
IP-BUS
IP-BUS:+2.2dBs
CD:+3.8dBs
B.UP
VDD
HANDS FREE
TEL/MIC
CN451
FM(100%): -20.
AM(30%): -31.
IP-BUS: +2.
CD: +3.
100%):-19.5dBs
(30%):-30.0dBs

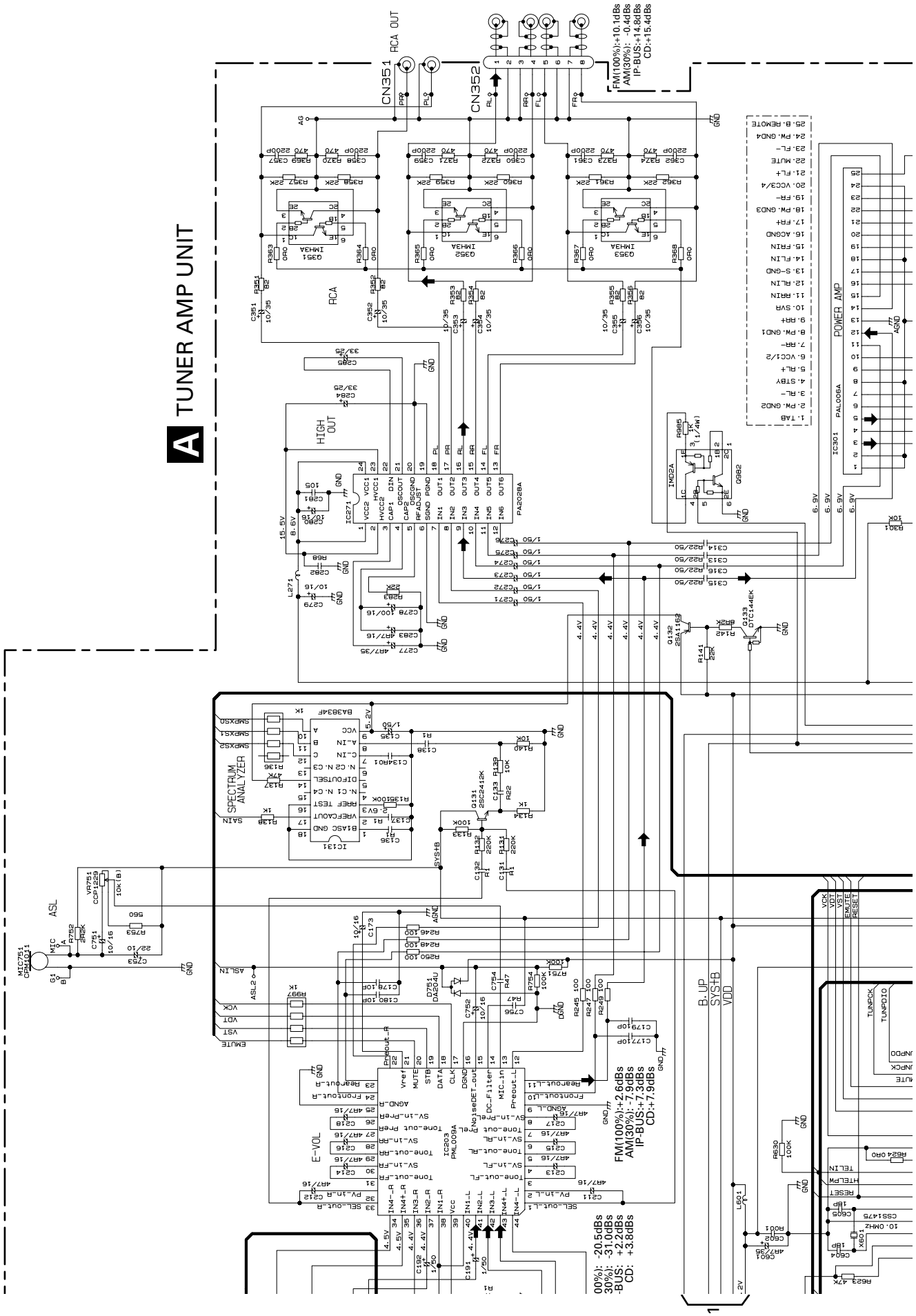
NOTE :

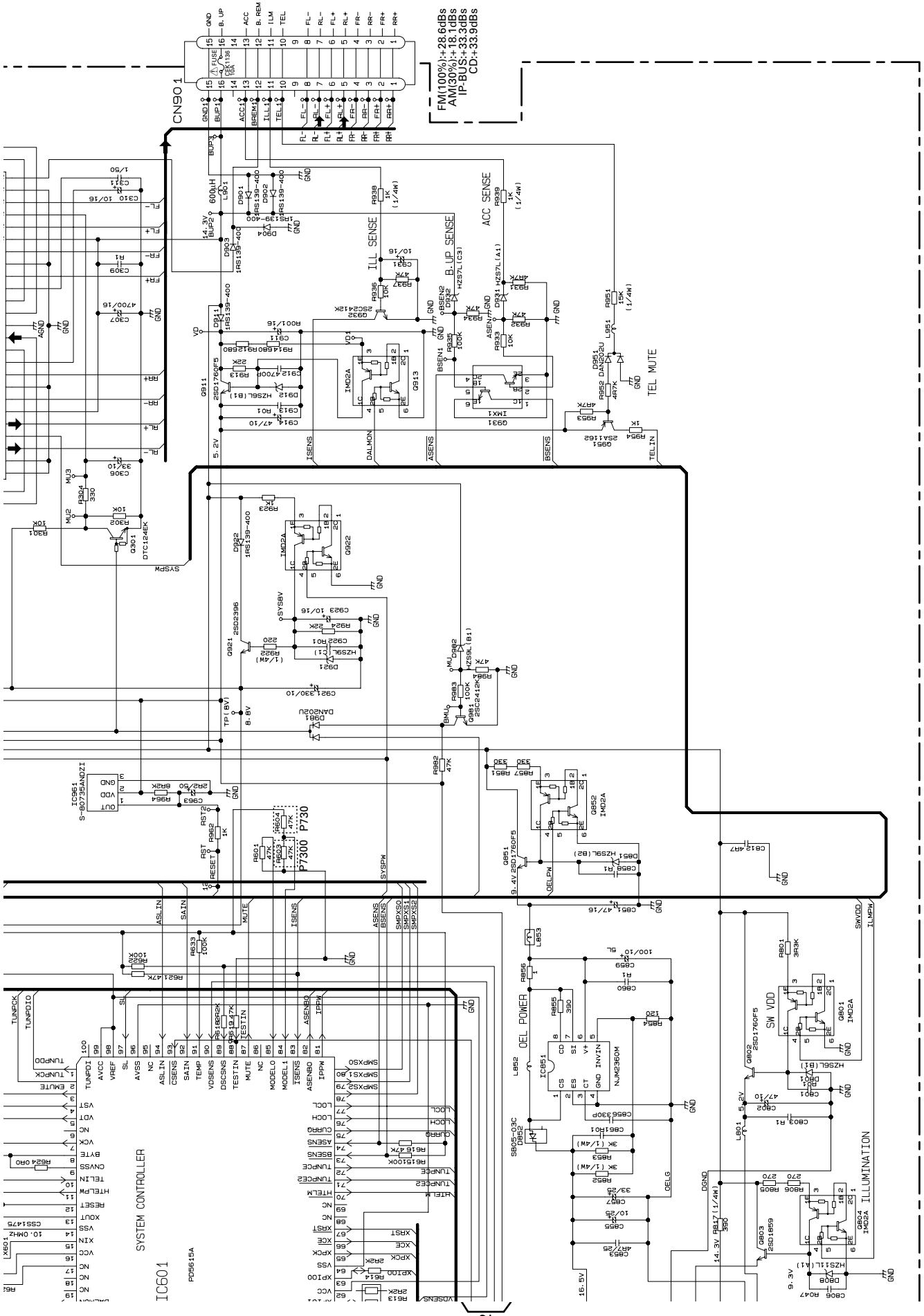
- ▭ Symbol indicates a resistor.
  No differentiation is made between chip resistors and discrete resistors.
- ⊣⊢ Symbol indicates a capacitor.
  No differentiation is made between chip capacitors and discrete capacitors.

The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

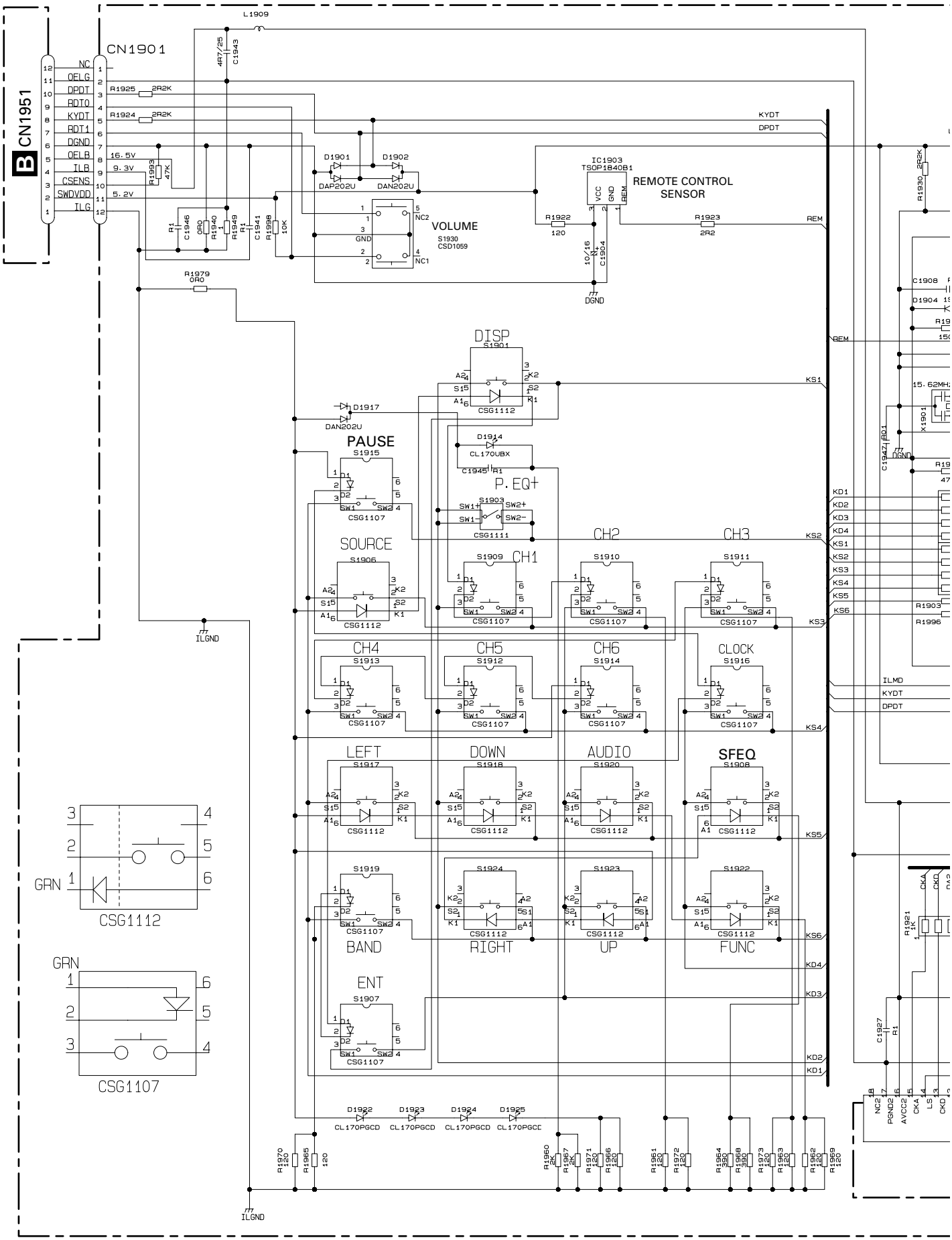
Decimal points for resistor and capacitor fixed values are expressed as :
2.2 → 2R2
0.022 → R022

A-b
A-a

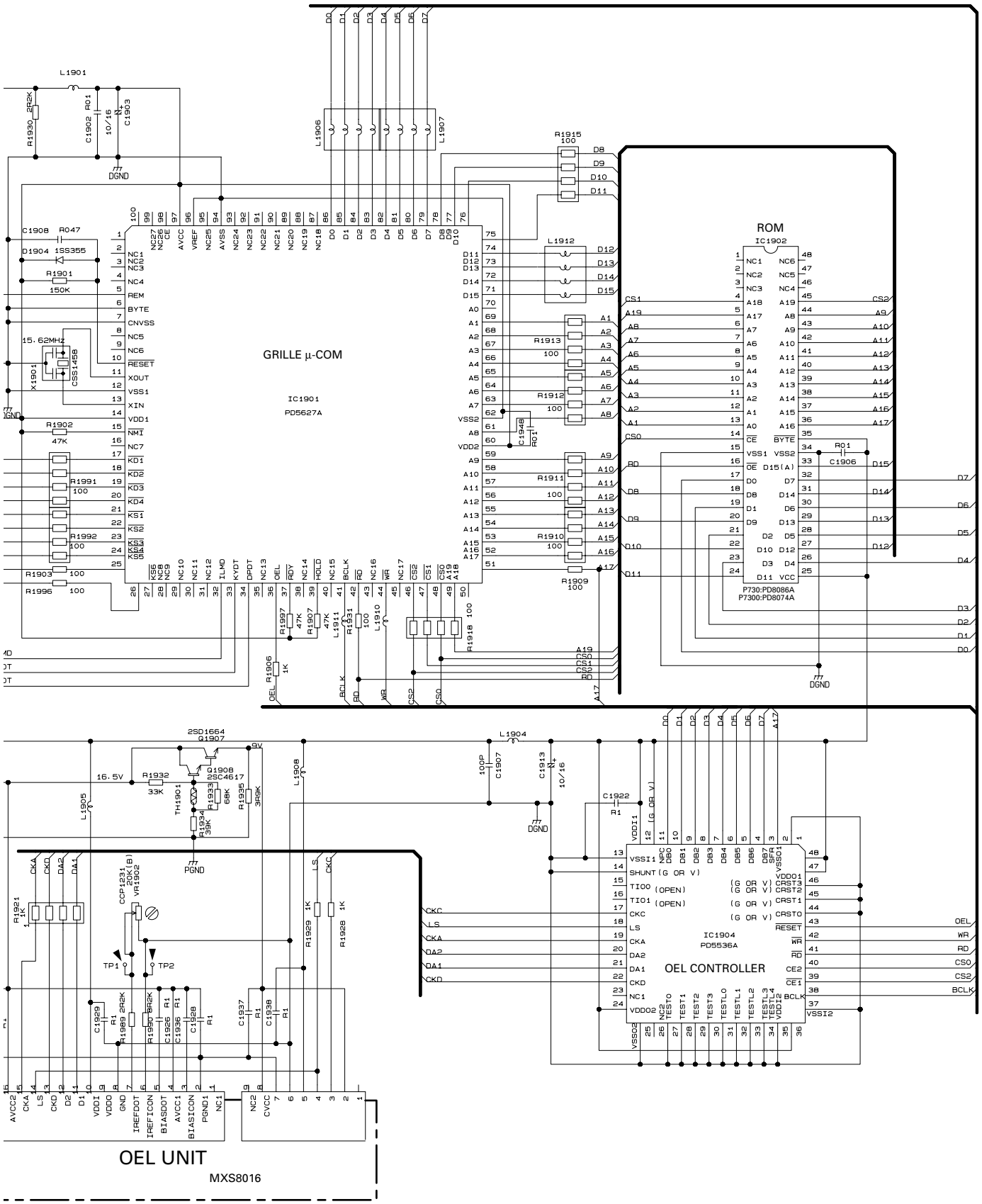

A TUNER AMP UNIT
CN351 RCA OUT
CN352
FM(100%):+10.1dBs
AM(30%): -0.4dBs
IP-BUS:+14.8dBs
CD:+15.4dBs
RCA
HIGH OUT
POWER AMP
PAL006A
IC301
PA2028A
SPECTRUM ANALYZER
E-VOL
TC9203A
PML009A
ASL
B.UP
SYSHB
VDD
FM(100%):+2.6dBs
AM(30%): -7.9dBs
IP-BUS:+7.3dBs
CD:+7.9dBs
00%): -20.5dBs
30%): -31.0dBs
-BUS: +2.2dBs
CD: +3.8dBs


CN90 1
FM(100%):+28.6dBs
AM(30%):+18.1dBs
IP-BUS:+33.3dBs
CD:+33.9dBs
ILL SENSE
B.UP SENSE
ACC SENSE
TEL MUTE
P7300 P730
SYSTEM CONTROLLER
IC601
PD5615A
OEL POWER
SW VDD
ILLUMINATION
A-a A-b
A-b

3.3 KEYBOARD UNIT

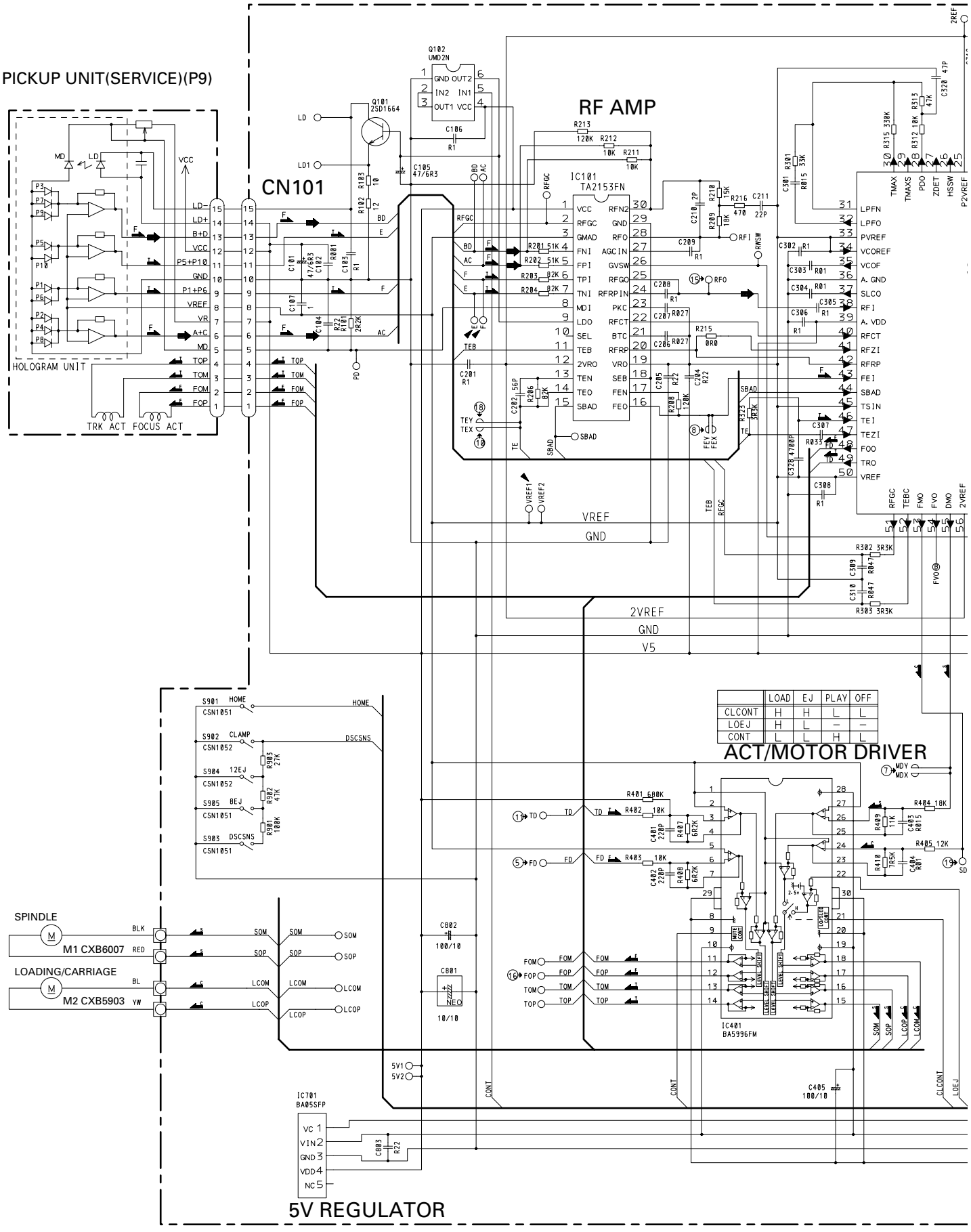


C KEYBOARD UNIT

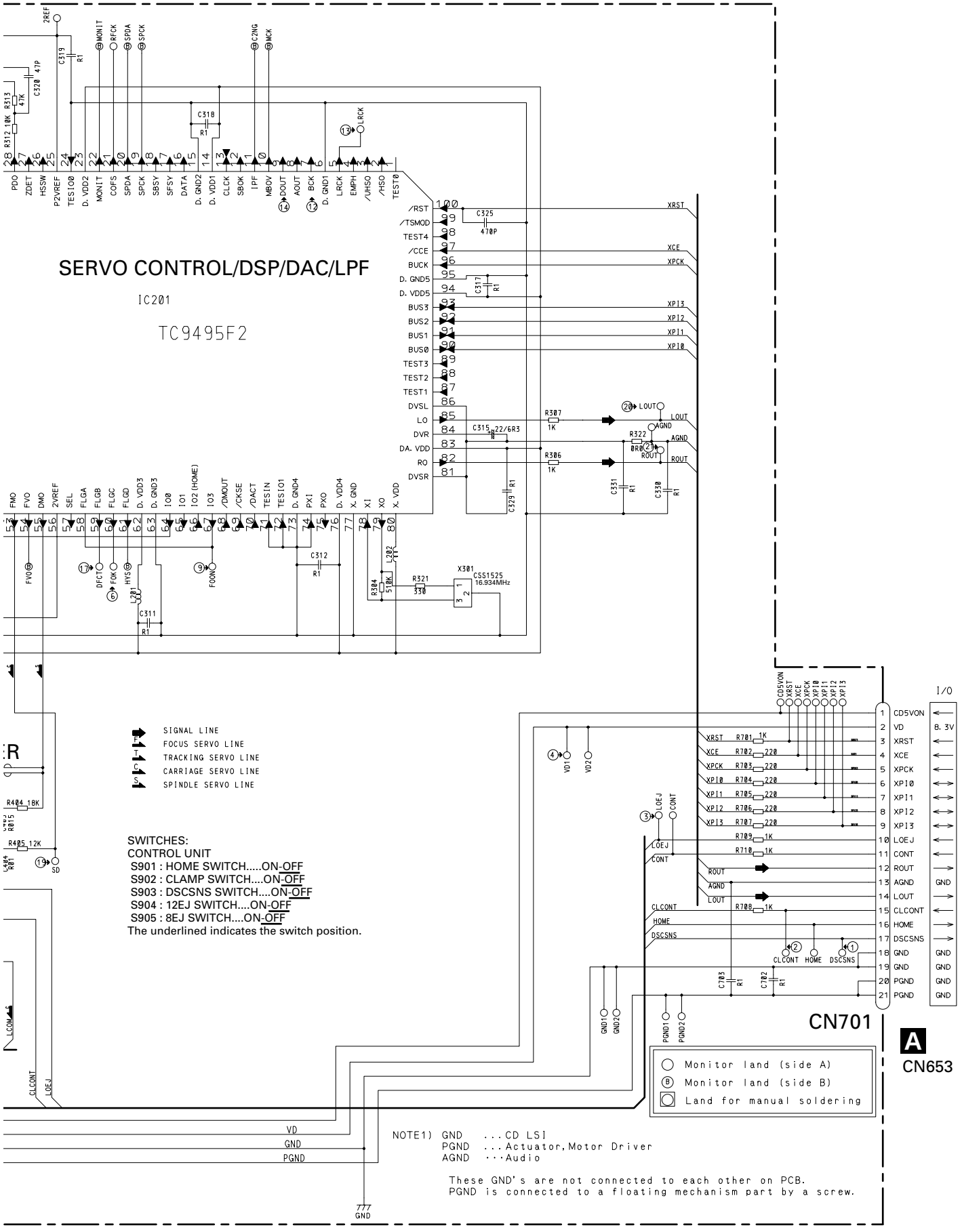


3.4 CD MECHANISM MODULE

D CONTROL UNIT



	LOAD	EJ	PLAY	OFF
CLCONT	H	H	L	L
LOEJ	H	L	–	–
CONT	L	L	H	L

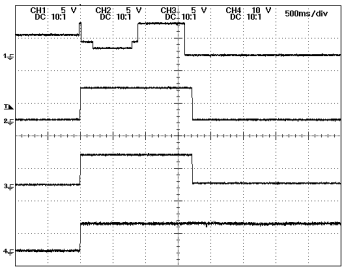

SERVO CONTROL/DSP/DAC/LPF
IC201
TC9495F2
SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE
SWITCHES:
CONTROL UNIT
S901 : HOME SWITCH.....ON-OFF
S902 : CLAMP SWITCH....ON-OFF
S903 : DSCSNS SWITCH....ON-OFF
S904 : 12EJ SWITCH....ON-OFF
S905 : 8EJ SWITCH....ON-OFF
The underlined indicates the switch position.
CN701
I/O
CD5VON
VD
B. 3V
XRST
XCE
XPCK
XP10
XP11
XP12
XP13
LOEJ
CONT
ROUT
AGND
GND
LOUT
CLCONT
HOME
DSCSNS
PGND
Monitor land (side A)
Monitor land (side B)
Land for manual soldering
CN653
NOTE1) GND ...CD LSI
PGND ...Actuator,Motor Driver
AGND ...Audio
These GND's are not connected to each other on PCB.
PGND is connected to a floating mechanism part by a screw.

Note:1. The encircled numbers denote measuring pointes in the circuit diagram.
2. Reference voltage
VREF:2.1V

● Waveforms

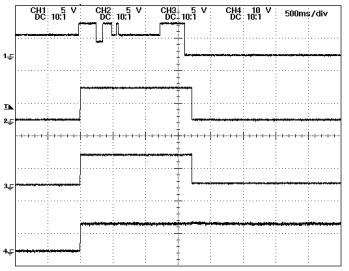
① CH1:DSCSNS 5V/div.
② CH2:CLCONT 5V/div.
③ CH3:LOEJ 5V/div. 500ms/div.
④ CH4:VD 10V/div.
When loading (12 cm CD)

Ref. : GND
Mode : Normal



① CH1:DSCSNS 5V/div.
② CH2:CLCONT 5V/div.
③ CH3:LOEJ 5V/div. 500ms/div.
④ CH4:VD 10V/div.
When loading (8 cm CD)

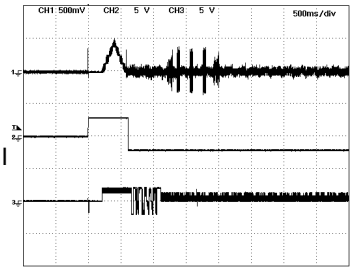
Ref. : GND
Mode : Normal



⑤ CH1:FD 500mV/div.
⑥ CH2:FOK 5V/div. 500ms/div.
⑦ CH3:MD 5V/div.

When setting up "Source On"

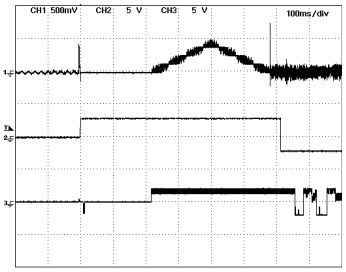
Ref. : VREF
Mode : Normal



⑤ CH1:FD 500mV/div.
⑥ CH2:FOK 5V/div. 100ms/div.
⑦ CH3:MD 5V/div.

Magnified drawing for "time"

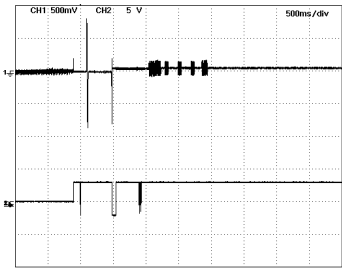
Ref. : VREF
Mode : Normal



⑧ CH1:FE 500mV/div.
⑨ CH2:FOON 5V/div. 500ms/div.

When setting up "Source On"

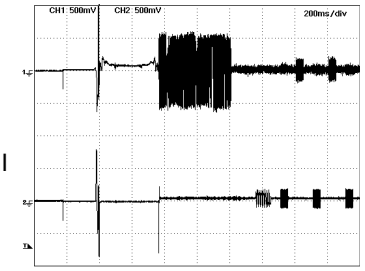
Ref. : VREF
Mode : Normal



⑩ CH1:TE 500mV/div.
⑧ CH2:FE 500mV/div. 200ms/div.

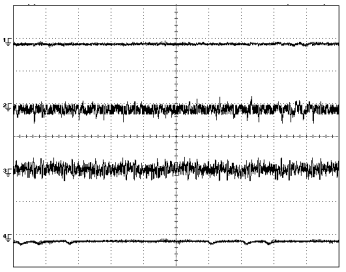
When setting up "Source On"

Ref. : VREF
Mode : Normal



⑧ CH1:FE 500mV/div.
⑤ CH2:FD 500mV/div.
⑩ CH3:TE 500mV/div. 1ms/div.
⑪ CH4:TD 500mV/div.
During "Play"

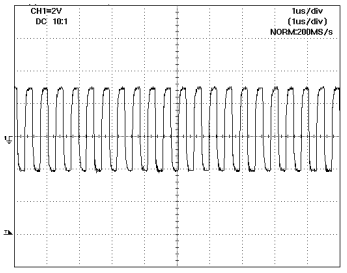
Ref. : VREF
Mode : Normal



⑫ CH1:BCK 2V/div. 1µs/div.

During "Play"

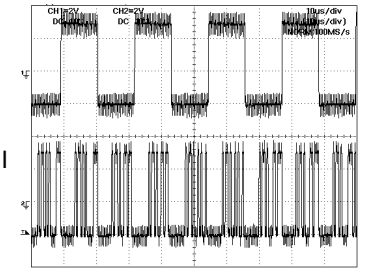
Ref. : VREF
Mode : Normal



⑬ CH1:LRCK 2V/div.
⑭ CH2:DOUT 2V/div. 10µs/div.

During "Play"

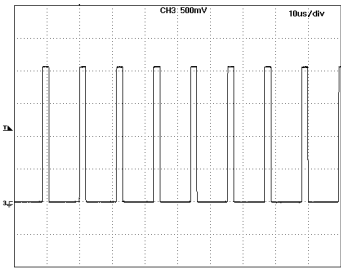
Ref. : VREF
Mode : Normal



⑦ CH1:MD 500mV/div. 10µs/div.

During "Play"

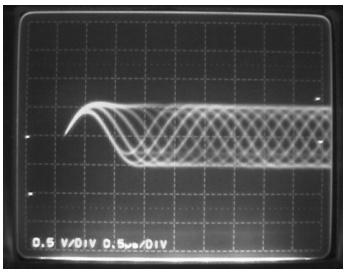
Ref. : VREF
Mode : Normal



⑮ CH1:RFO 500mV/div. 0.5µs/div.

During "Play"

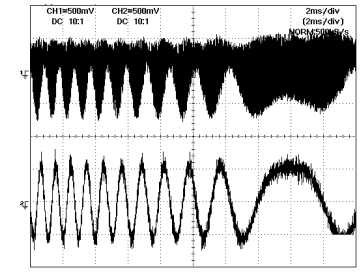
Ref. : VREF
Mode : Normal



⑮ CH1:RFO 500mV/div.
⑩ CH2:TE 500mV/div. 2ms/div.

During "Tracking Open"

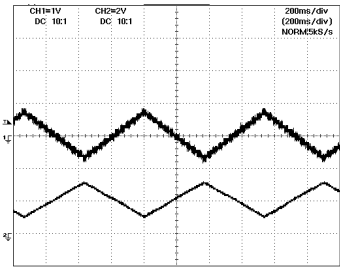
Ref. : VREF
Mode : Test



⑤ CH1:FD 1V/div.
⑯ CH2:FOP 2V/div. 200ms/div.

With no disk inserted
During "Focus Close"

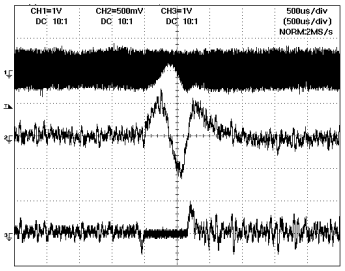
Ref. : VREF
Mode : Test



⑮ CH1:RFO 1V/div.
⑩ CH2:TE 500mV/div. 500µs/div.
⑪ CH3:TD 1V/div.

1 Track Jump

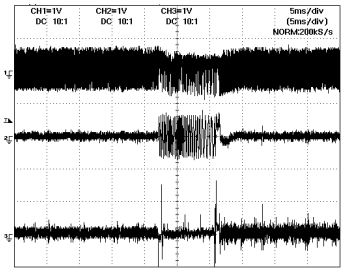
Ref. : VREF
Mode : Test



⑮ CH1:RFO 1V/div.
⑩ CH2:TE 1V/div. 5ms/div.
⑪ CH3:TD 1V/div.

32 Track Jump

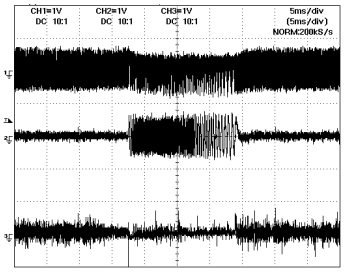
Ref. : VREF
Mode : Test



⑮ CH1:RFO 1V/div.
⑩ CH2:TE 1V/div. 5ms/div.
⑪ CH3:TD 1V/div.

100 Track Jump

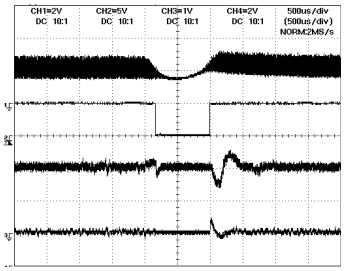
Ref. : VREF
Mode : Test



⑮ CH1:RFO 2V/div.
⑰ CH2:DFCT 5V/div. 500µs/div.
⑤ CH3:FD 1V/div.
⑪ CH4:TD 2V/div.

When reproducing black dots (800µm)

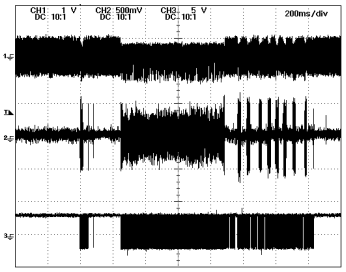
Ref. : VREF
Mode : Normal



⑮ CH1:RFO 1V/div.
⑩ CH2:TE 500mV/div. 200ms/div.
⑰ CH3:DFCT 5V/div.

During inside/outside search

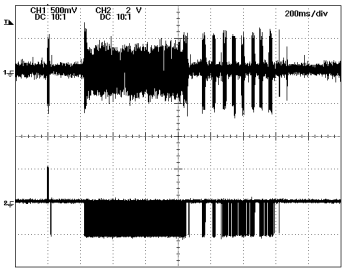
Ref. : VREF
Mode : Normal



⑱ CH1:TEY 500mV/div. 200ms/div.
⑲ CH2:SD 2V/div.

During inside/outside search

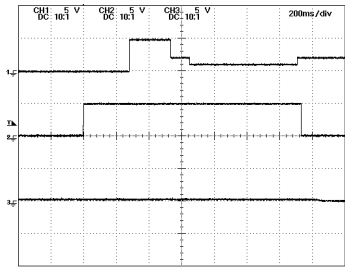
Ref. : VREF
Mode : Normal



① CH1:DSCSNS 5V/div.
② CH2:CLCONT 5V/div. 200ms/div.
③ CH3:LOEJ 5V/div.

When "Eject" (12 cm CD)

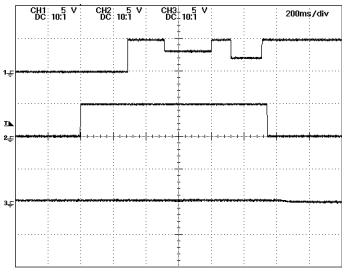
Ref. : GND
Mode : Normal



① CH1:DSCSNS 5V/div.
② CH2:CLCONT 5V/div. 200ms/div.
③ CH3:LOEJ 5V/div.

When "Eject" (8cm CD)

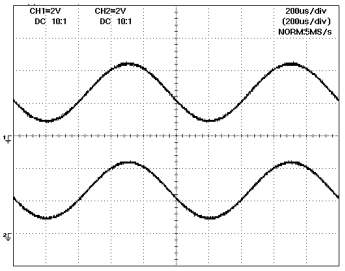
Ref. : GND
Mode : Normal



⑳ CH1:LOUT 2V/div.
㉑ CH2:ROUT 2V/div. 200µs/div.

"Play" in 1kHz, 0dB

Ref. : GND
Mode : Normal

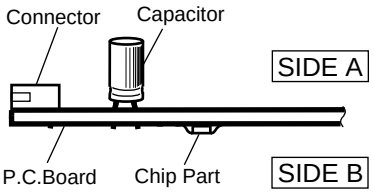


4. PCB CONNECTION DIAGRAM

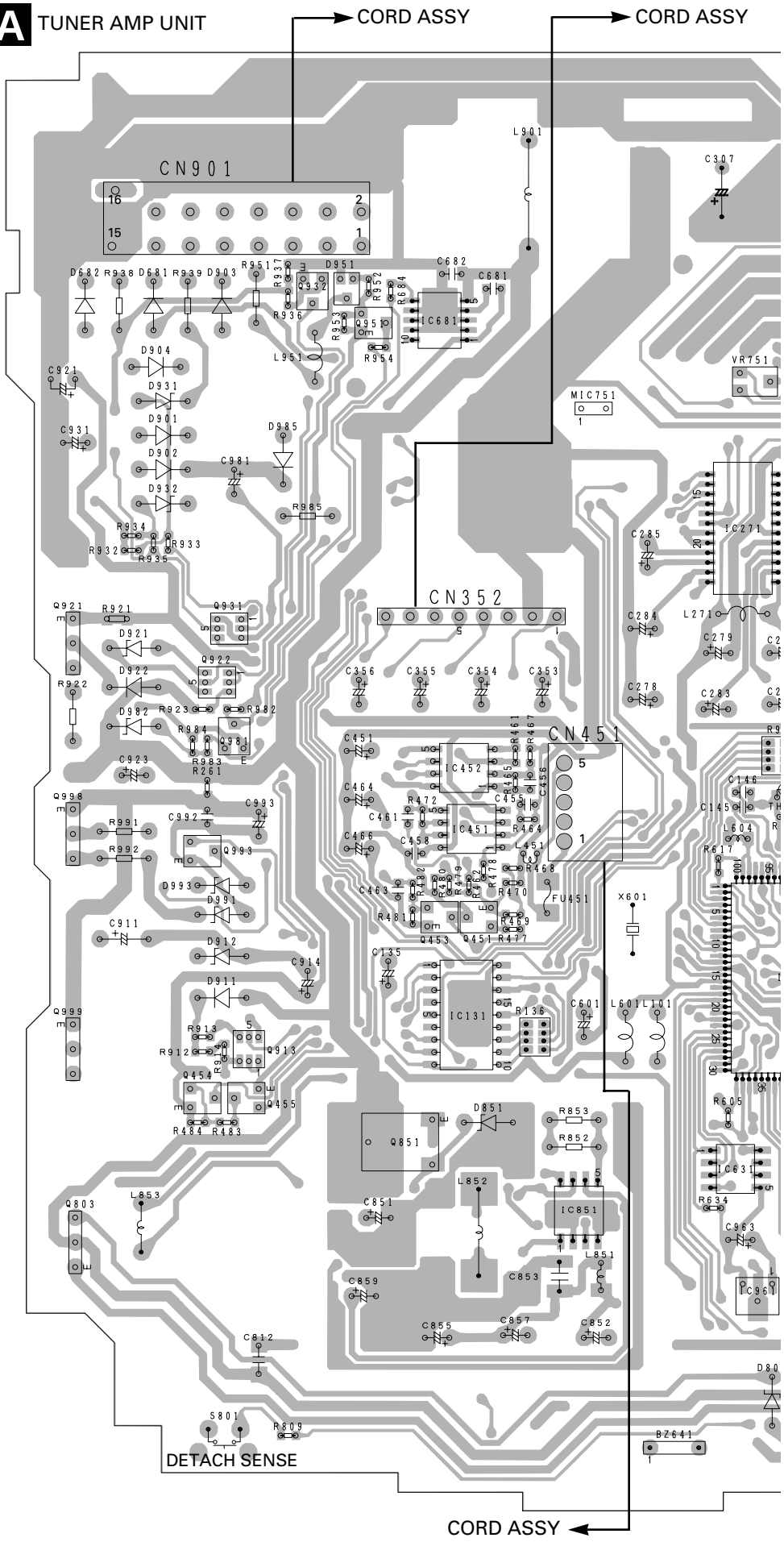
4.1 TUNER AMP UNIT

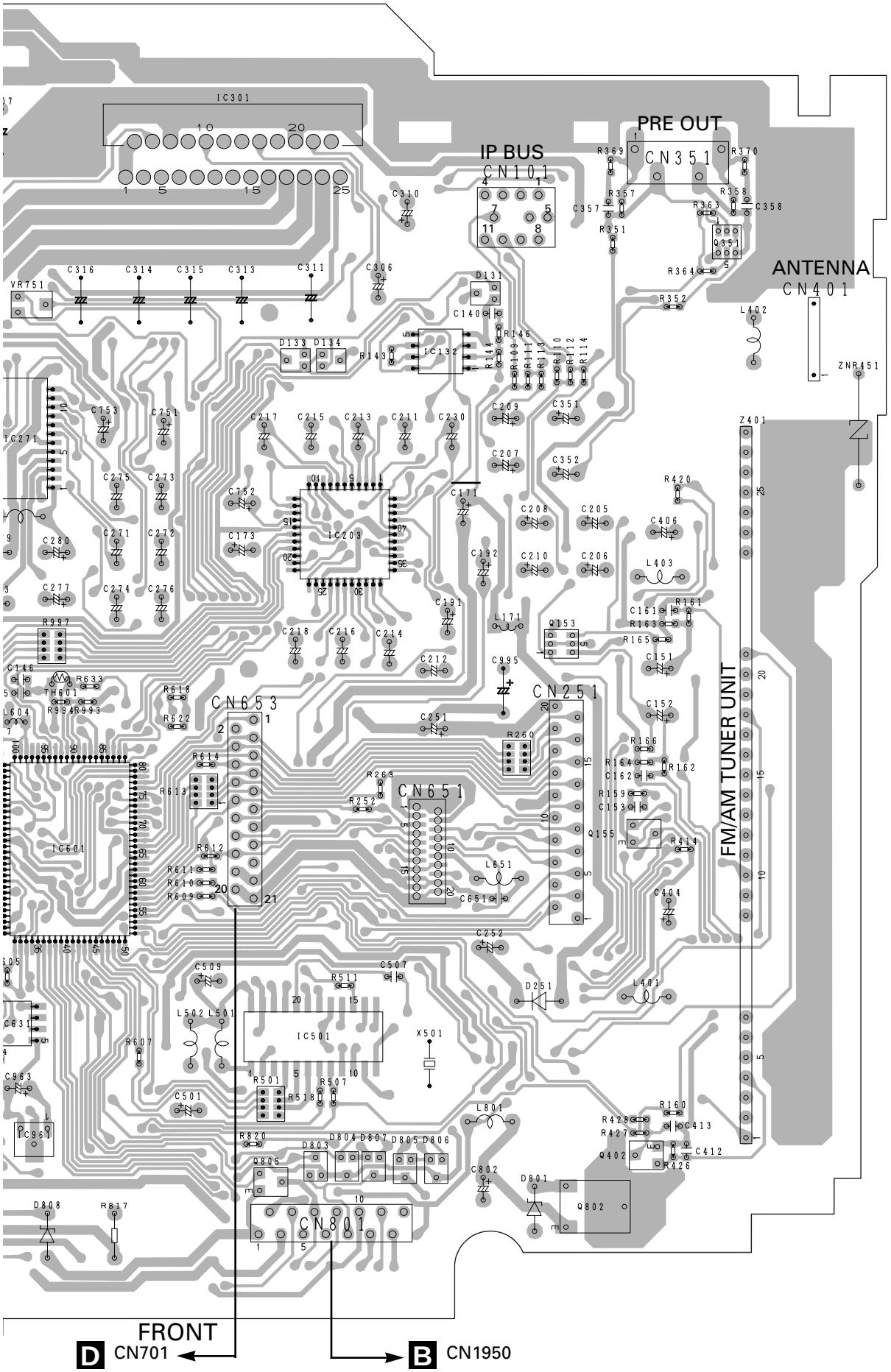
NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



A TUNER AMP UNIT





IC, Q

SIDE A

IC301

Q932

Q351
IC681
Q951

IC132

IC271

Q931
Q921

IC203

Q922

Q153

Q981

IC452

Q998

IC451

Q993

Q453
Q451
Q155

IC601

Q999
IC131

Q913

Q454

Q455

Q851

IC631

IC501

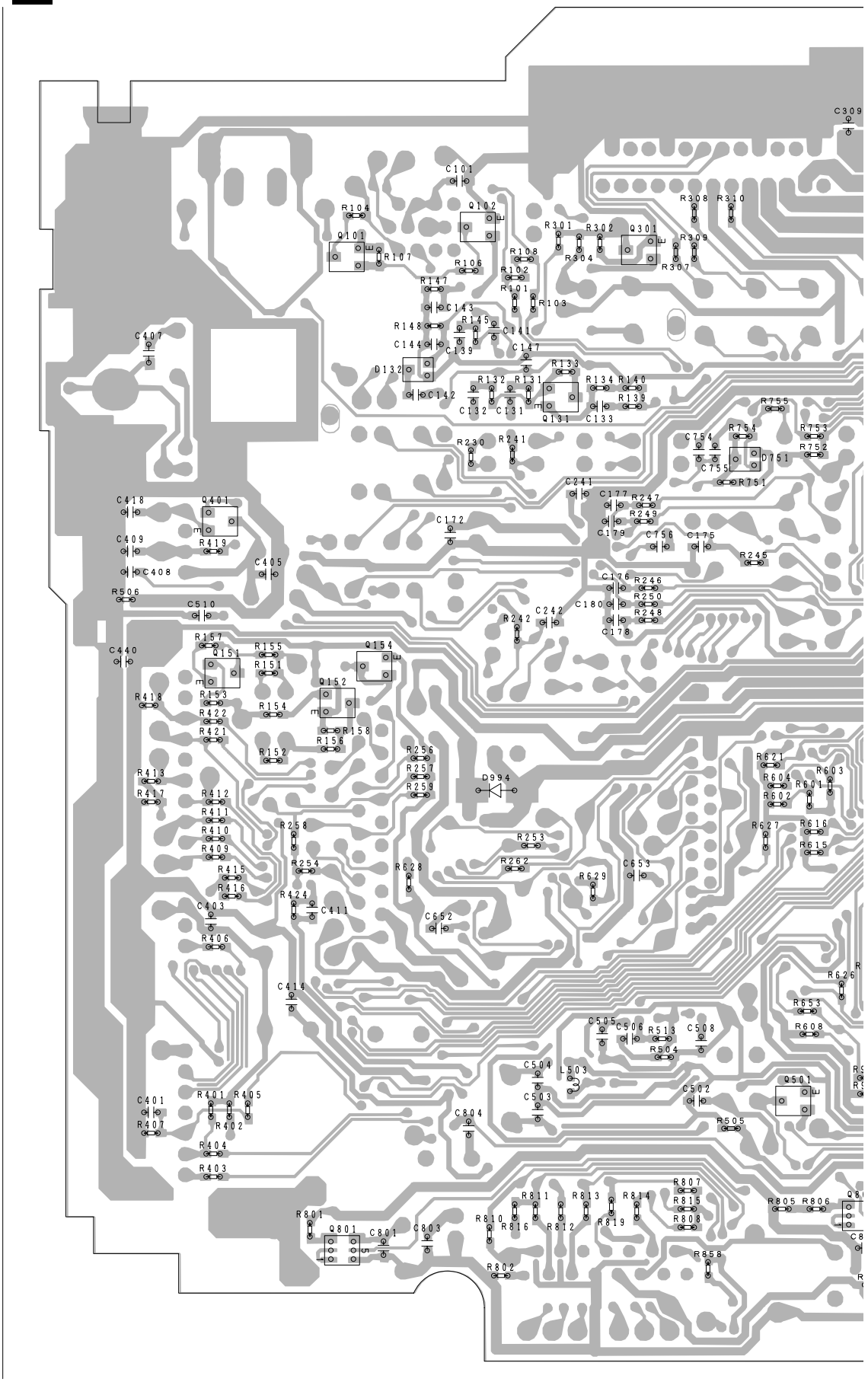
Q803
IC851

IC961

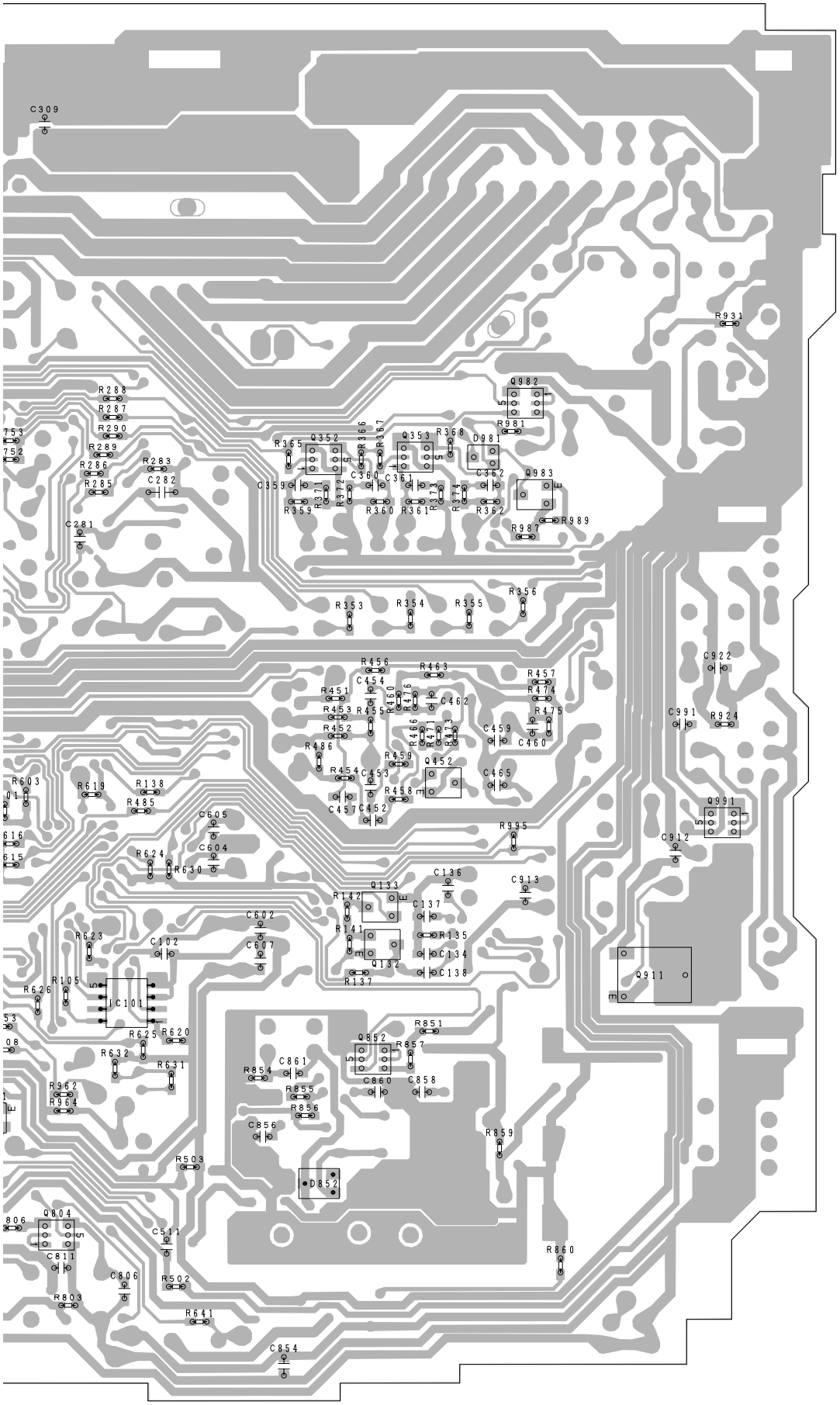
Q402
Q805

Q802

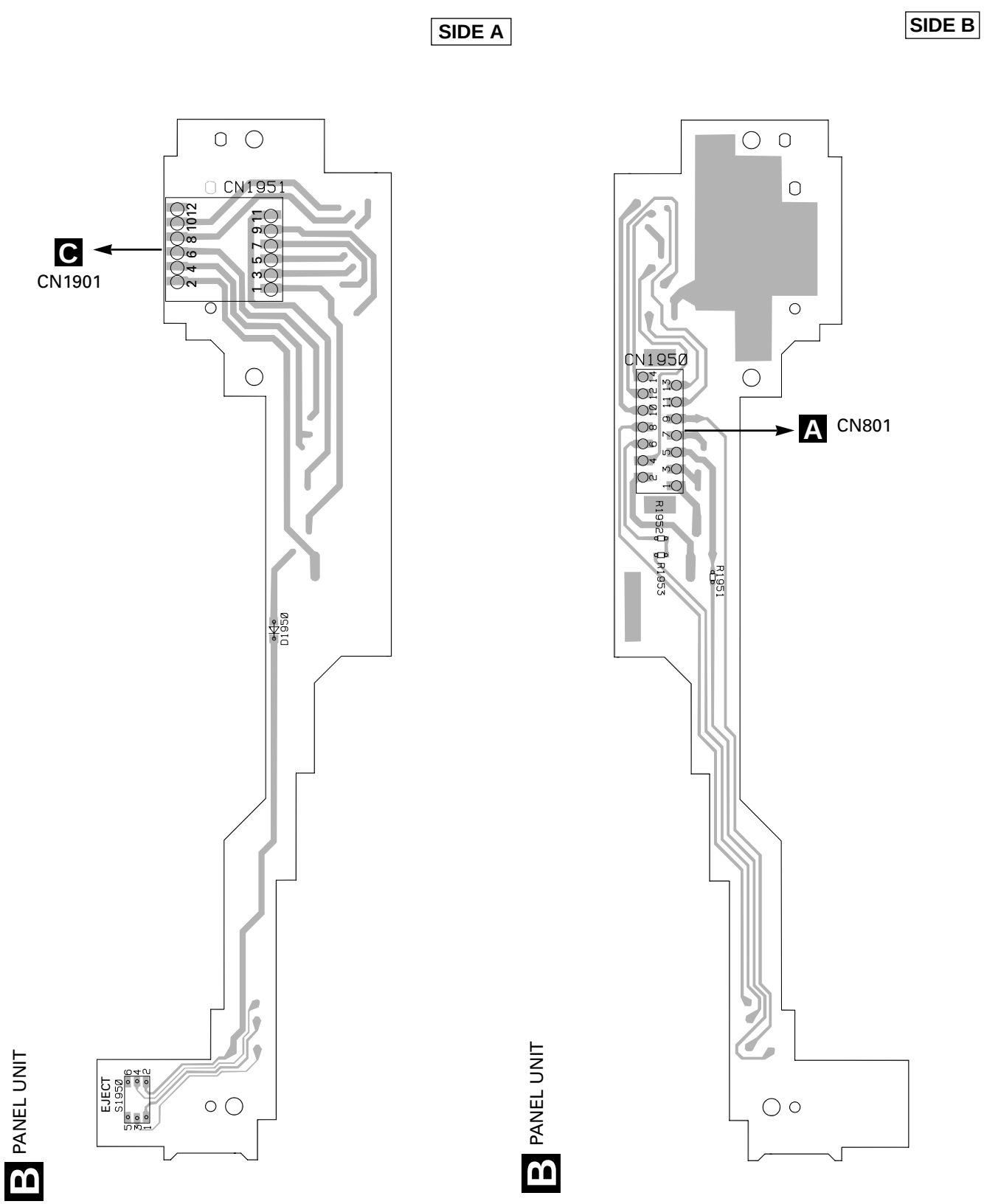
A TUNER AMP UNIT



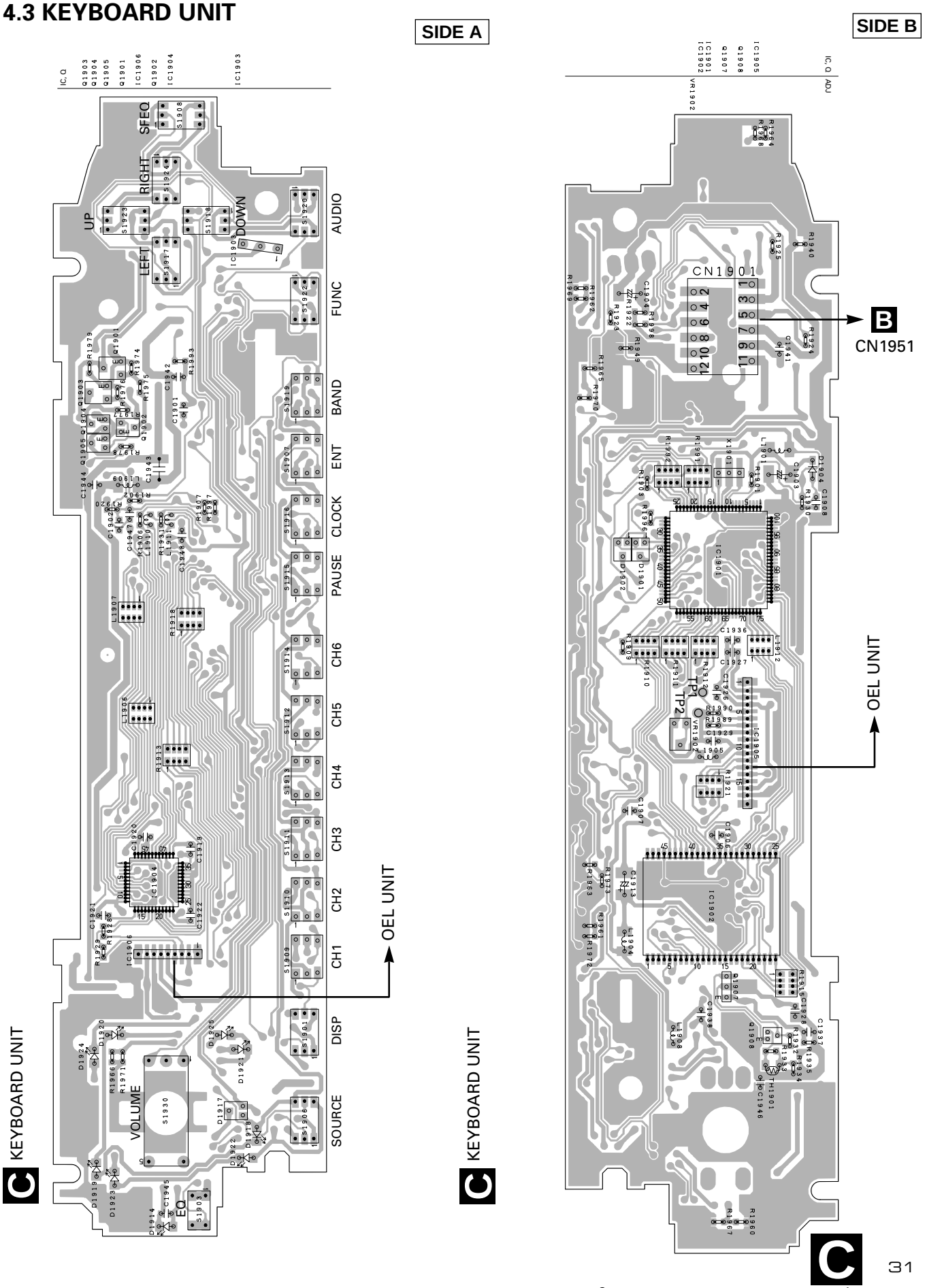
SIDE B


C309
R931
Q982
R981
R288
R287
R290
R289
R286
R285
R283
C282
753
752
R365
Q352
R366
R367
Q353
R368
D981
C359
R371
R372
C360
C361
R373
C362
Q983
R359
R360
R361
R374
R362
R987
R989
C281
R353
R354
R355
R356
C922
R456
R463
C454
R457
R451
R474
C462
R453
R455
R475
C991
R924
R452
C459
C460
R486
R459
Q452
R454
C453
C465
R458
R603
R619
R138
R485
C457
C452
C605
R995
616
615
R624
C604
R630
C136
C912
C913
Q133
R142
C137
C602
R141
R135
C134
C607
R623
C102
Q132
C138
R137
R105
R626
IC101
Q911
Q991
53
08
R625
R620
R851
Q852
R857
R632
R631
C861
R854
C860
C858
R855
R962
R964
R856
C856
R859
R503
D852
806
Q804
C511
C811
R860
C806
R502
R803
R641
C854
D
C
B
A

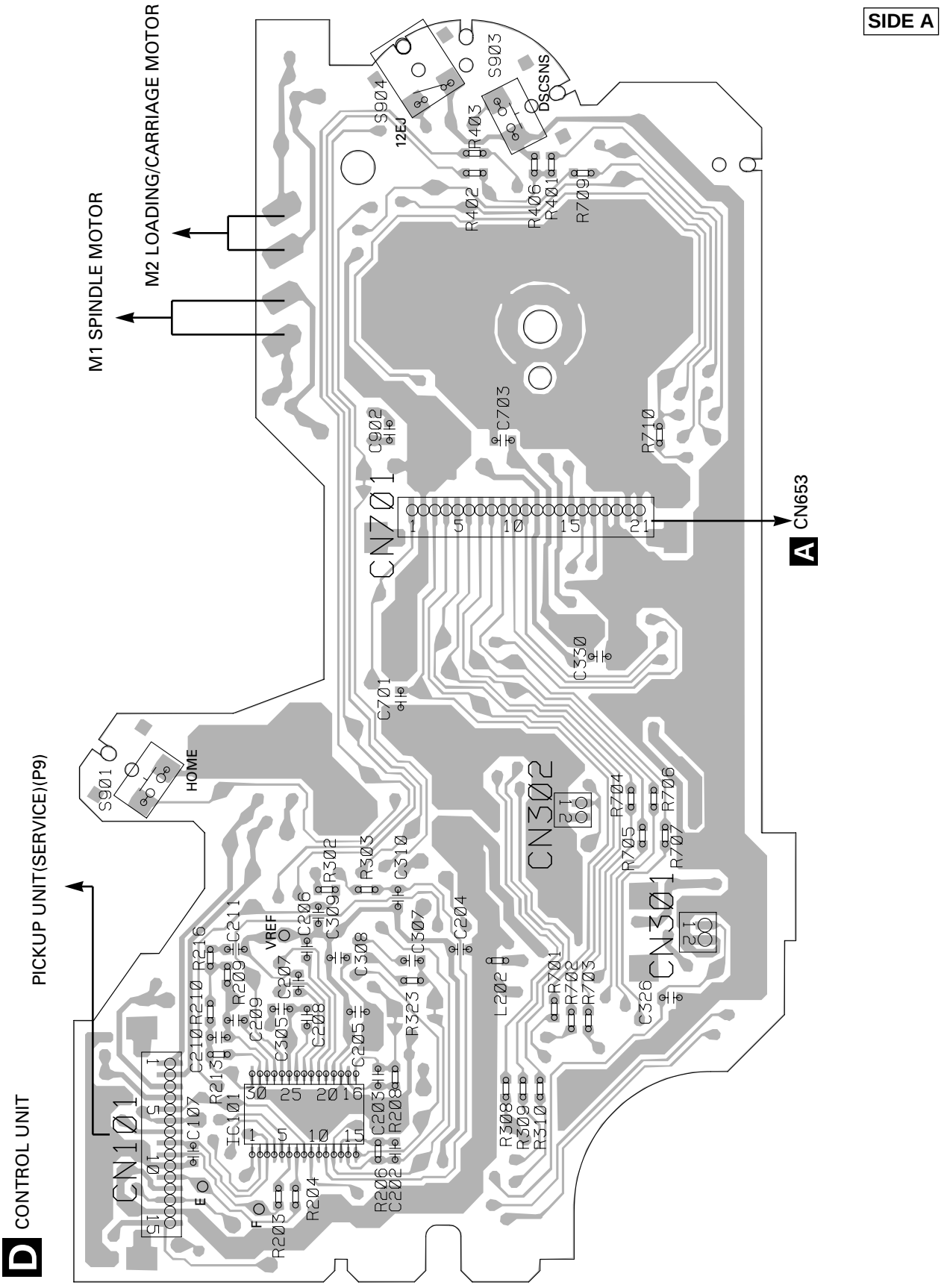
4.2 PANEL UNIT



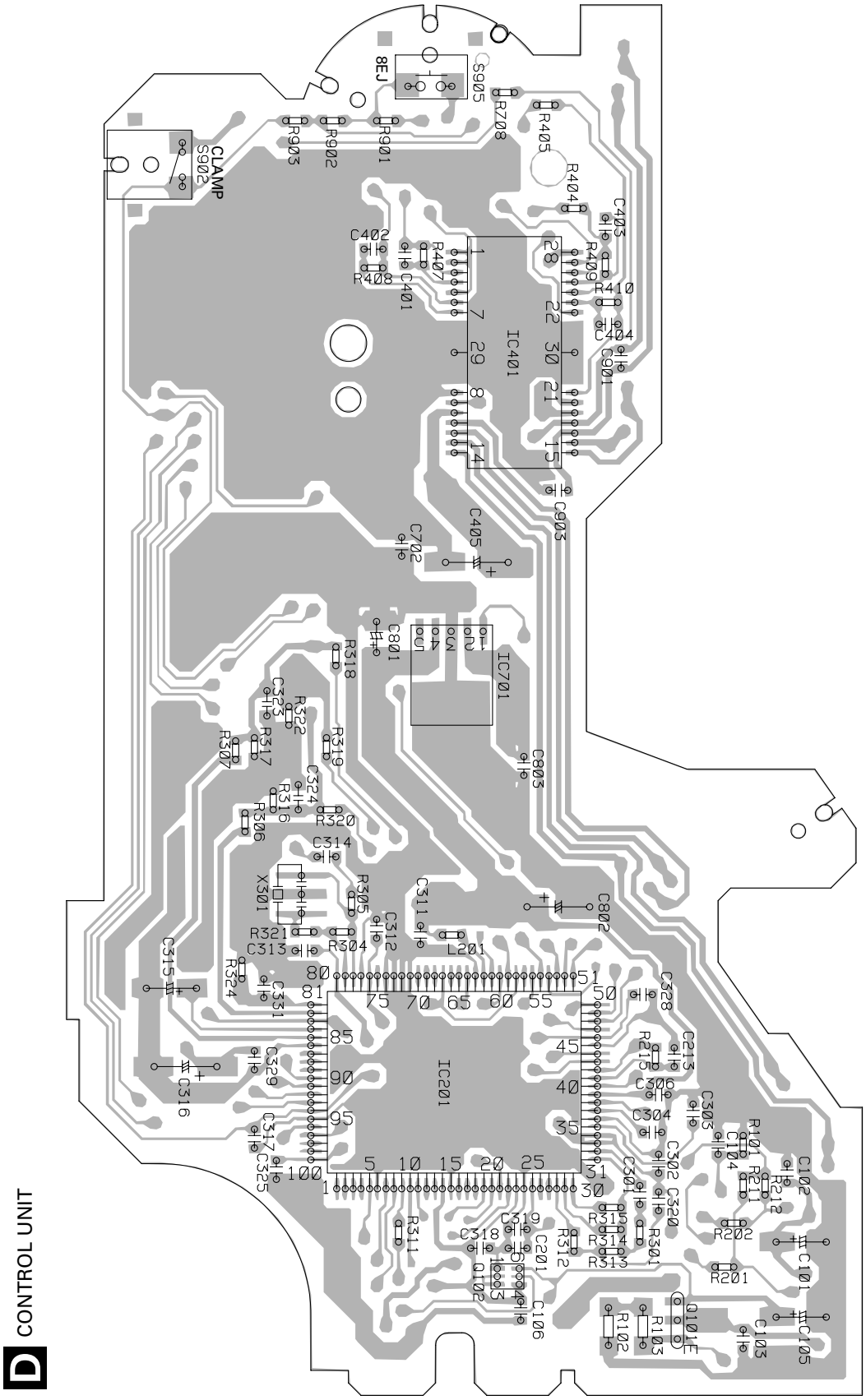
4.3 KEYBOARD UNIT



4.4 CD MECHANISM MODULE



SIDE B



D CONTROL UNIT

5. ELECTRICAL PARTS LIST

NOTES:

● Parts whose parts numbers are omitted are subject to being not supplied.

● The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

A Unit Number : CWM7452(DEH-P730/X1N/UC)
Unit Number : CWM7453(DEH-P7300/X1N/UC)
Unit Name : Tuner Amp Unit

MISCELLANEOUS

=====Circuit Symbol and No.		===Part Name	Part No.
IC	101	IC	CA0008AM
IC	131	IC	BA3834F
IC	203	IC	PML009A
IC	271	IC	PA2028A
IC	301	IC	PAL006A
IC	452	IC	NJM2068MD
IC	601	IC	PD5615A
IC	851	IC	NJM2360M
IC	961	IC	S-80735ANDZI
Q	101	Transistor	2SA1162
Q	102	Transistor	DTC124EK
Q	131	Transistor	2SC2412K
Q	132	Transistor	2SA1162
Q	133	Transistor	DTC144EK
Q	301	Transistor	DTC124EK
Q	351	Transistor	IMH3A
Q	352	Transistor	IMH3A
Q	353	Transistor	IMH3A
Q	401	Transistor	2SC2412K
Q	451	Transistor	2SC3326
Q	454	Transistor	2SA1162
Q	455	Transistor	DTC114EK
Q	801	Transistor	IMD2A
Q	802	Transistor	2SD1760F5
Q	803	Transistor	2SD1859
Q	804	Transistor	IMD2A
Q	805	Transistor	DTC143EK
Q	851	Transistor	2SD1760F5
Q	852	Transistor	IMD2A
Q	911	Transistor	2SD1760F5
Q	913	Transistor	IMD2A
Q	921	Transistor	2SD2396
Q	922	Transistor	IMD2A
Q	931	Transistor	IMX1
Q	932	Transistor	2SC2412K
Q	951	Transistor	2SA1162
Q	981	Transistor	2SC2412K
Q	982	Transistor	IMD2A
Q	991	Transistor	IMD2A
Q	998	Transistor	2SD2396
D	751	Diode Network	DA204U
D	801	Diode	HZS6L(B1)
D	803	Diode Network	DA204U
D	804	Diode	DAN202U
D	805	Diode	DAP202U
D	806	Diode	DAN202U
D	807	Diode	DAP202U
D	808	Diode	HZS11L(A1)
D	851	Diode	HZS9L(B2)
D	852	Diode	SB05-03C

=====Circuit Symbol and No.		===Part Name	Part No.
D	901	Diode	1SR139-400
D	902	Diode	1SR139-400
D	903	Diode	1SR139-400
D	904	Diode	1SR139-400
D	911	Diode	1SR139-400
D	912	Diode	HZS6L(B1)
D	921	Diode	HZS9L(C1)
D	922	Diode	1SR139-400
D	931	Diode	HZS7L(A1)
D	932	Diode	HZS7L(C3)
D	951	Diode	DAN202U
D	981	Diode	DAN202U
D	982	Diode	HZS9L(B1)
D	991	Diode	HZS9L(B1)
ZNR	451	Surge Protector	DSP-201M-A21F
L	271	Ferri-Inductor	LAU101K
L	401	Ferri-Inductor	LAU2R2K
L	402	Ferri-Inductor	LAU4R7K
L	403	Ferri-Inductor	LAU1R0M
L	451	Inductor	CTF1378
L	601	Ferri-Inductor	LAU2R2K
L	801	Inductor	LAU100K
L	852	Inductor	CTF1510
L	853	Inductor	CTF1489
L	901	Choke Coil 600µH	CTH1221
L	951	Ferri-Inductor	LAU2R2K
X	601	Radiator 10.00MHz	CSS1475
S	801	Switch(DETACH SENSE)	CSN1039
VR	751	Semi-fixed 10kΩ(B)	CCP1229
FU	451	Fuse 200mA	CEK1189
MIC	751	Microphone	CPM1011
BZ	641	Buzzer	CPV1050
		FM/AM Tuner Unit	CWE1563

RESISTORS

R	101	RS1/16S101J
R	102	RS1/16S470J
R	103	RS1/16S101J
R	104	RS1/16S222J
R	105	RS1/16S103J
R	106	RS1/16S562J
R	107	RS1/16S332J
R	108	RS1/16S150J
R	109	RS1/16S181J
R	110	RS1/16S181J
R	111	RS1/16S223J
R	112	RS1/16S223J
R	113	RS1/16S102J
R	114	RS1/16S102J
R	131	RS1/16S224J
R	132	RS1/16S224J
R	133	RS1/16S104J
R	134	RS1/16S102J
R	135	RS1/16S104J
R	136	RAB4C102J

=====Circuit Symbol and No.		===Part Name	Part No.
R	137		RS1/16S473J
R	138		RS1/16S102J
R	139		RS1/16S103J
R	140		RS1/16S103J
R	141		RS1/16S223J
R	142		RS1/16S822J
R	151		RS1/16S0R0J
R	152		RS1/16S0R0J
R	161		RS1/16S272J
R	162		RS1/16S272J
R	163		RS1/16S162J
R	164		RS1/16S162J
R	230		RS1/16S0R0J
R	245		RS1/16S101J
R	246		RS1/16S101J
R	247		RS1/16S101J
R	248		RS1/16S101J
R	249		RS1/16S101J
R	250		RS1/16S101J
R	283		RS1/16S223J
R	301		RS1/16S103J
R	302		RS1/16S103J
R	304		RS1/16S331J
R	351		RS1/16S820J
R	352		RS1/16S820J
R	353		RS1/16S820J
R	354		RS1/16S820J
R	355		RS1/16S820J
R	356		RS1/16S820J
R	357		RS1/16S223J
R	358		RS1/16S223J
R	359		RS1/16S223J
R	360		RS1/16S223J
R	361		RS1/16S223J
R	362		RS1/16S223J
R	363		RS1/16S0R0J
R	364		RS1/16S0R0J
R	365		RS1/16S0R0J
R	366		RS1/16S0R0J
R	367		RS1/16S0R0J
R	368		RS1/16S0R0J
R	369		RS1/16S471J
R	370		RS1/16S471J
R	371		RS1/16S471J
R	372		RS1/16S471J
R	373		RS1/16S471J
R	374		RS1/16S471J
R	401		RS1/16S473J
R	402		RS1/16S473J
R	403		RS1/16S681J
R	404		RS1/16S681J
R	409		RS1/16S681J
R	410		RS1/16S103J
R	411		RS1/16S681J
R	412		RS1/16S681J
R	413		RS1/16S681J
R	414		RS1/16S473J
R	415		RS1/16S472J
R	416		RS1/16S473J
R	417		RS1/16S473J
R	418		RS1/16S473J
R	419		RS1/16S222J
R	420		RS1/16S222J
R	424		RS1/16S393J
R	451		RS1/16S152J

=====Circuit Symbol and No.		===Part Name	Part No.
R	452		RS1/16S102J
R	453		RS1/16S471J
R	456		RS1/16S102J
R	457		RS1/16S102J
R	462		RS1/16S0R0J
R	463		RS1/16S0R0J
R	465		RS1/16S105J
R	468		RS1/16S223J
R	469		RS1/16S103J
R	470		RS1/16S105J
R	472		RS1/16S0R0J
R	473		RS1/16S103J
R	474		RS1/16S103J
R	475		RS1/16S123J
R	476		RS1/16S473J
R	477		RS1/16S103J
R	483		RS1/16S152J
R	484		RS1/16S223J
R	485		RS1/16S0R0J
R	506		RS1/16S0R0J
R	601		RS1/16S473J
R	603	(DEH-P7300/X1N/UC)	RS1/16S473J
R	604	(DEH-P730/X1N/UC)	RS1/16S473J
R	608		RS1/16S104J
R	611		RS1/16S102J
R	612		RS1/16S102J
R	613		RAB4C222J
R	614		RS1/16S222J
R	615		RS1/16S104J
R	616		RS1/16S473J
R	618		RS1/16S222J
R	619		RS1/16S473J
R	620		RS1/16S472J
R	621		RS1/16S473J
R	622		RS1/16S104J
R	623		RS1/16S473J
R	624		RS1/16S0R0J
R	627		RS1/16S104J
R	628		RS1/16S104J
R	630		RS1/16S104J
R	633		RS1/16S104J
R	641		RS1/16S102J
R	751		RS1/16S104J
R	752		RS1/16S222J
R	753		RS1/16S561J
R	754		RS1/16S104J
R	801		RS1/16S332J
R	805		RS1/16S271J
R	806		RS1/16S271J
R	807		RS1/16S473J
R	808		RS1/16S473J
R	809		RS1/16S102J
R	810		RS1/16S222J
R	811		RS1/16S222J
R	812		RS1/16S222J
R	813		RS1/16S222J
R	814		RS1/16S222J
R	815		RS1/16S473J
R	816		RS1/16S104J
R	817		RD1/4PU391J
R	819		RS1/16S222J
R	820		RS1/16S222J
R	851		RS1/16S331J
R	852		RD1/4PU302J
R	853		RD1/4PU302J

=====Circuit Symbol and No.	===Part Name	Part No.
R 854		RS1/16S121J
R 855		RS1/16S391J
R 856		RS1/16S1R0J
R 857		RS1/16S331J
R 912		RS1/16S681J
R 913		RS1/16S223J
R 914		RS1/16S681J
R 922		RD1/4PU221J
R 923		RS1/16S102J
R 924		RS1/16S223J
R 931		RS1/16S472J
R 932		RS1/16S473J
R 933		RS1/16S103J
R 934		RS1/16S473J
R 935		RS1/16S104J
R 936		RS1/16S103J
R 937		RS1/16S473J
R 938		RD1/4PU102J
R 939		RD1/4PU102J
R 951		RD1/4PU153J
R 952		RS1/16S472J
R 953		RS1/16S472J
R 954		RS1/16S102J
R 962		RS1/16S102J
R 964		RS1/16S822J
R 982		RS1/16S473J
R 983		RS1/16S104J
R 984		RS1/16S473J
R 985		RD1/4PU102J
R 991		RD1/4PU221J
R 992		RD1/4PU221J
R 993		RS1/16S472J
R 994		RS1/16S222J
R 995		RS1/16S0R0J
R 997		RAB4C102J

CAPACITORS

C 101		CKSRYB104K16
C 102		CKSRYB104K16
C 131		CKSRYB104K16
C 132		CKSRYB104K16
C 133		CKSRYB224K16
C 134		CKSRYB103K50
C 135		CEJQ1R0M50
C 136		CKSRYB104K16
C 137		CKSRYB104K16
C 138		CKSRYB104K16
C 161		CKSRYB183K25
C 162		CKSRYB183K25
C 171		CEJQ470M10
C 172		CKSRYB104K16
C 173		CEJQ100M16
C 177		CCSRCH100D50
C 178		CCSRCH100D50
C 179		CCSRCH100D50
C 180		CCSRCH100D50
C 191		CEJQ1R0M50
C 192		CEJQ1R0M50
C 205		CEJQR22M50
C 206		CEJQR22M50
C 207		CEJQ1R0M50
C 208		CEJQ1R0M50
C 209		CEJQ1R0M50
C 210		CEJQ1R0M50
C 211		CEJQNP4R7M16
C 212		CEJQNP4R7M16
C 213		CEJQNP4R7M16

=====Circuit Symbol and No.	===Part Name	Part No.
C 214		CEJQNP4R7M16
C 215		CEJQNP4R7M16
C 216		CEJQNP4R7M16
C 217		CEJQNP4R7M16
C 218		CEJQNP4R7M16
C 271		CEJQNP1R0M50
C 272		CEJQNP1R0M50
C 273		CEJQNP1R0M50
C 274		CEJQNP1R0M50
C 275		CEJQNP1R0M50
C 276		CEJQNP1R0M50
C 277		CEJQ4R7M35
C 278		CEJQ101M16
C 279		CEJQ100M16
C 280		CEJQ100M16
C 281		CKSRYB105K10
C 282		CKSYB684K16
C 283		CASAQ4R7M16
C 284		CEJQ330M25
C 285		CEJQ330M25
C 306		CEJQ330M10
C 307	4700µF/16V	CCH1367
C 309		CKSRYB104K16
C 310		CEJQ100M16
C 311		CFTNA105J50
C 313		CFTNA224J50
C 314		CFTNA224J50
C 315		CFTNA224J50
C 316		CFTNA224J50
C 351		CEJQ100M35
C 352		CEJQ100M35
C 353		CEJQ100M35
C 354		CEJQ100M35
C 355		CEJQ100M35
C 356		CEJQ100M35
C 357		CKSRYB222K50
C 358		CKSRYB222K50
C 359		CKSRYB222K50
C 360		CKSRYB222K50
C 361		CKSRYB222K50
C 362		CKSRYB222K50
C 403		CKSRYB473K25
C 404		CEAL101M6R3
C 405		CKSRYB103K50
C 406		CEJQ220M10
C 407		CKSQYB103K50
C 408		CKSRYB223K25
C 409		CKSRYB223K25
C 411		CKSRYB472K50
C 440		CKSRYB103K25
C 451		CEJQ100M16
C 453		CKSRYB224K16
C 454		CKSRYB224K16
C 457		CKSRYB473K16
C 459		CKSRYB104K16
C 460		CKSRYB104K16
C 461		CKSRYB224K16
C 462		CCSRCH471J50
C 464		CEJQ100M16
C 465		CKSRYB104K16
C 466		CEJQ100M16
C 601		CEJQ4R7M35
C 602		CKSRYB102K50
C 604		CCSRCH180J50
C 605		CCSRCH180J50

=====Circuit Symbol and No.		===Part Name	Part No.
C	653		CKSRYB103K50
C	751		CEJQ100M16
C	752		CEJQ100M16
C	753		CEJQ220M10
C	754		CKSRYB474K10
C	756		CKSRYB474K10
C	801		CKSRYB103K50
C	802		CEJQ470M10
C	803		CKSRYB104K16
C	806		CKSRYB473K25
C	812		CKSYB475K16
C	851		CEJQ470M16
C	853	4.7µF/25V	CCG1111
C	855		CEJQ100M25
C	856		CCSRCH331J50
C	857		CEJQ330M25
C	858		CKSRYB104K16
C	859		CEJQ101M10
C	860		CKSRYB104K16
C	861		CKSRYB103K25
C	911		CEAT102M16
C	912		CKSRYB472K50
C	913		CKSRYB103K50
C	914		CEJQ470M10
C	921	330µF/10V	CCH1181
C	922		CKSRYB103K50
C	923		CEJQ100M16
C	931		CEJQ100M16
C	963		CEJQ2R2M50
C	991		CKSRYB473K25
C	992		CKSRYB102K50
C	993		CEJQ101M10

C Unit Number : CWM7808(DEH-P730/X1N/UC)
Unit Number : CWM7467(DEH-P7300/X1N/UC)
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	1901	IC	PD5627A
IC	1902	IC (DEH-P730/X1N/UC)	PD8086A
		IC (DEH-P7300/X1N/UC)	PD8074A
IC	1903	IC	TSOP1840SB1
IC	1904	IC	PD5536A
Q	1907	Transistor	2SD1664
Q	1908	Transistor	2SC4617
D	1901	Diode	DAP202U
D	1902	Diode	DAN202U
D	1904	Diode	1SS355
D	1914	LED	CL170UBX
D	1917	Diode	DAN202U
D	1922	LED	CL170PGCD
D	1923	LED	CL170PGCD
D	1924	LED	CL170PGCD
D	1925	LED	CL170PGCD
L	1901	Chip-Inductor	LCTA2R2J3225
L	1904	Chip-Inductor	LCTA2R2J3225
L	1905	Inductor	LCTA220J2520
L	1906	Inductor-Array	CTF1421
L	1907	Inductor-Array	CTF1421
L	1908	Inductor	LCTA220J2520
L	1909	Inductor	CTF1484
L	1910	Inductor	CTF1410
L	1911	Inductor	CTF1410
L	1912	Inductor-Array	CTF1421
TH	1901	Thermistor	CCX1037
X	1901	Ceramic Resonator 15.62MHz	CSS1458
S	1901	Push Switch	CSG1112
S	1903	Push Switch	CSG1111

=====Circuit Symbol and No.		===Part Name	Part No.
S	1906	Push Switch	CSG1112
S	1907	Switch	CSG1107
S	1908	Push Switch	CSG1146
S	1909	Switch	CSG1107
S	1910	Switch	CSG1107
S	1911	Switch	CSG1107
S	1912	Switch	CSG1107
S	1913	Switch	CSG1107
S	1914	Switch	CSG1107
S	1915	Switch	CSG1107
S	1916	Switch	CSG1107
S	1917	Push Switch	CSG1112
S	1918	Push Switch	CSG1112
S	1919	Switch	CSG1107
S	1920	Push Switch	CSG1112
S	1922	Push Switch	CSG1112
S	1923	Push Switch	CSG1112
S	1924	Push Switch	CSG1112
S	1930	Encoder	CSD1059
VR	1902	Semi-fixed 20kΩ(B)	CCP1231
		OEL Unit	MXS8016

RESISTORS

R	1901	RS1/16S154J
R	1902	RS1/16S473J
R	1903	RS1/16S101J
R	1906	RS1/16S102J
R	1907	RS1/16S473J
R	1909	RS1/16S101J
R	1910	RAB4C101J
R	1911	RAB4C101J
R	1912	RAB4C101J
R	1913	RAB4C101J
R	1915	RAB4C101J
R	1918	RAB4C101J
R	1921	RAB4C102J
R	1922	RS1/16S121J
R	1923	RS1/16S2R2J
R	1924	RS1/16S222J
R	1925	RS1/16S222J
R	1928	RS1/16S102J
R	1929	RS1/16S102J
R	1930	RS1/16S222J
R	1931	RS1/16S101J
R	1932	RS1/16S333J
R	1933	RS1/16S683J
R	1934	RS1/16S393J
R	1935	RS1/16S392J
R	1940	RS1/16S0R0J
R	1949	RS1/16S1R0J
R	1960	RS1/16S202J
R	1961	RS1/16S121J
R	1962	RS1/16S121J
R	1963	RS1/16S121J
R	1964	RS1/16S391J
R	1965	RS1/16S121J
R	1966	RS1/16S121J
R	1967	RS1/16S202J
R	1968	RS1/16S391J
R	1969	RS1/16S121J
R	1970	RS1/16S121J
R	1971	RS1/16S121J
R	1972	RS1/16S121J
R	1973	RS1/16S121J
R	1979	RS1/16S0R0J
R	1989	RS1/16S222J
R	1990	RS1/16S822J
R	1991	RAB4C101J

=====Circuit Symbol and No.	===Part Name	Part No.
R 1992		RAB4C101J
R 1993		RS1/16S473J
R 1996		RS1/16S101J
R 1997		RS1/16S473J
R 1998		RS1/16S103J
CAPACITORS		
C 1902		CKSRYB103K25
C 1903		CSZSR100M16
C 1904		CSZSR100M16
C 1906		CKSRYB103K25
C 1907		CCSRCH101J50
C 1908		CKSRYB473K16
C 1913		CSZSR100M16
C 1922		CKSRYB104K16
C 1926		CKSRYB104K25
C 1927		CKSRYB104K25
C 1928		CKSRYB104K25
C 1929		CKSRYB104K16
C 1936		CKSRYB104K25
C 1937		CKSRYB104K16
C 1938		CKSRYB104K16
C 1941		CKSRYB104K16
C 1943	4.7µF/25V	CCG1111
C 1945		CKSRYB104K25
C 1946		CKSRYB104K16
C 1947		CKSRYB103K25
C 1948		CKSRYB103K25

B Unit Number : CWM7375
Unit Name : Panel Unit

MISCELLANEOUS

D	1950	LED	CL220PGC
S	1950	Push Switch(EJECT)	CSG1112

RESISTORS

R	1952		RS1/16S101J
R	1953		RS1/16S101J

D Unit Number : CWX2481
Unit Name : Control Unit

MISCELLANEOUS

IC	101	IC	TA2153FN
IC	201	IC	TC9495F2
IC	401	IC	BA5996FM
IC	701	IC	BA05SFP
Q	101	Transistor	2SD1664
Q	102	Transistor	UMD2N
L	201	Inductor	CTF1546
L	202	Inductor	CTF1546
X	301	Ceramic Resonator 16.934MHz	CSS1525
S	901	Spring Switch(HOME)	CSN1051
S	902	Spring Switch(CLAMP)	CSN1052
S	903	Spring Switch(DSCSNS)	CSN1051
S	904	Spring Switch(12EJ)	CSN1052
S	905	Spring Switch(8EJ)	CSN1051

RESISTORS

R	101	RS1/16S222J
R	102	RS1/8S120J
R	103	RS1/8S100J
R	201	RS1/16S513J
R	202	RS1/16S513J

=====Circuit Symbol and No.	===Part Name	Part No.
R 203		RS1/16S823J
R 204		RS1/16S823J
R 206		RS1/16S823J
R 208		RS1/16S124J
R 209		RS1/16S183J
R 210		RS1/16S153J
R 211		RS1/16S103J
R 212		RS1/16S103J
R 213		RS1/16S124J
R 215		RS1/16S0R0J
R 216		RS1/16S471J
R 301		RS1/16S333J
R 302		RS1/16S332J
R 303		RS1/16S332J
R 304		RS1/16S514J
R 306		RS1/16S102J
R 307		RS1/16S102J
R 312		RS1/16S103J
R 313		RS1/16S473J
R 315		RD1/4PU334J
R 321		RS1/16S331J
R 322		RS1/16S0R0J
R 323		RS1/16S332J
R 401		RS1/16S684J
R 402		RS1/16S103J
R 403		RS1/16S103J
R 404		RS1/16S183J
R 405		RS1/16S123J
R 407		RS1/16S622J
R 408		RS1/16S622J
R 409		RS1/16S113J
R 410		RS1/16S752J
R 701		RS1/16S102J
R 702		RS1/16S221J
R 703		RS1/16S221J
R 704		RS1/16S221J
R 705		RS1/16S221J
R 706		RS1/16S221J
R 707		RS1/16S221J
R 708		RS1/16S102J
R 709		RS1/16S102J
R 710		RS1/16S102J
R 901		RS1/16S104J
R 902		RS1/16S473J
R 903		RS1/16S273J

CAPACITORS

C	101	CEV470M6R3
C	102	CKSRYB102K50
C	103	CKSRYB104K16
C	104	CKSRYB224K16
C	105	CEV470M6R3
C	106	CKSRYB104K16
C	107	CKSRYB105K6R3
C	201	CKSRYB104K16
C	202	CCSRCH560J50
C	204	CKSRYB224K16
C	205	CKSRYB224K16
C	206	CKSRYB273K25
C	207	CKSRYB273K25
C	208	CKSRYB104K16
C	209	CKSRYB104K16
C	210	CCSRCK2R0C50
C	211	CCSRCH220J50
C	301	CKSRYB153K25
C	302	CKSRYB104K16
C	303	CKSRYB103K50

=====Circuit Symbol and No.		===Part Name	Part No.
C	304		CKSRYB103K50
C	305		CKSRYB104K16
C	306		CKSRYB104K16
C	307		CKSRYB333K16
C	308		CKSRYB104K16
C	309		CKSRYB473K16
C	310		CKSRYB473K16
C	311		CKSRYB104K16
C	312		CKSRYB104K16
C	315		CEV220M6R3
C	317		CKSRYB104K16
C	318		CKSRYB104K16
C	319		CKSRYB104K16
C	320		CCSRCH470J50
C	325		CKSRYB471K50
C	328		CKSRYB472K50
C	329		CKSRYB104K16
C	330		CKSRYB104K16
C	331		CKSRYB104K16
C	401		CKSRYB221K50
C	402		CKSRYB221K50
C	403		CKSRYB153K25
C	404		CKSRYB103K50
C	405		CEV101M10
C	702		CKSRYB104K16
C	703		CKSRYB104K16
C	801	10µF/10V	CCH1349
C	802		CEV101M10
C	803		CKSRYB224K16

Miscellaneous Parts List

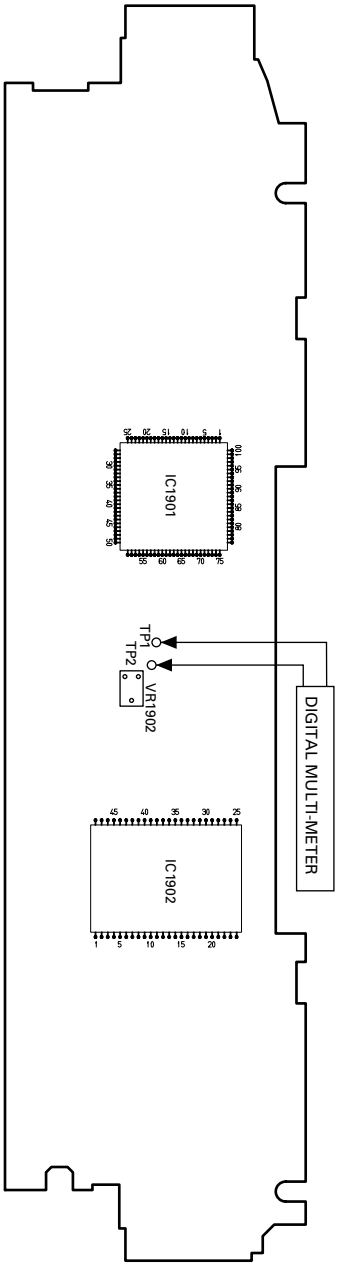
		Pickup Unit(Service)(P9)	CXX1480
M	1	Motor Unit(SPINDLE)	CXB6007
M	2	Motor Unit(LOADING/CARRIAGE)	CXB5903

6. ADJUSTMENT

6.1 OEL UNIT ADJUSTMENT

● **Adjustment point**

KEYBOARD UNIT (SIDE B)



<When the OEL Unit has been replaced>

1. Use VR1902 to adjust the resistance between TP1 and TP2 to 5.85kΩ.

6.2 CD ADJUSTMENT

1) Precautions

- This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to VREF(approx. 2.1V) instead of GND.
  If VREF and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.
  Do not connect the negative probe of the measuring equipment to VREF and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to VREF with the channel 2 negative probe connected to GND.
  Since the frame of the measuring instrument is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.
  If by accident VREF comes in contact with GND, immediately switch the regulator or power OFF.

- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.

- Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.

- Since the protective systems in the unit's software are rendered inoperative in test mode, be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.

- The RFI and RFO signals are easy to oscillate because of a wide band. When observing them, insert a resistor of about 1 kΩ to the series.

- This equipment will not guarantee the load ejection operation when the mechanical unit is turned upside down. In particular, if the ejection operation is incorrectly performed and recovery is disabled, the recovery is enabled by resetting a product or turning ACC off to on.

2) Test Mode

This mode is used for adjusting the CD mechanism module of the device.

- Test mode starting procedure
  Reset while pressing the **4** and **6** keys together.

- Test mode cancellation
  Switch ACC, back-up OFF.

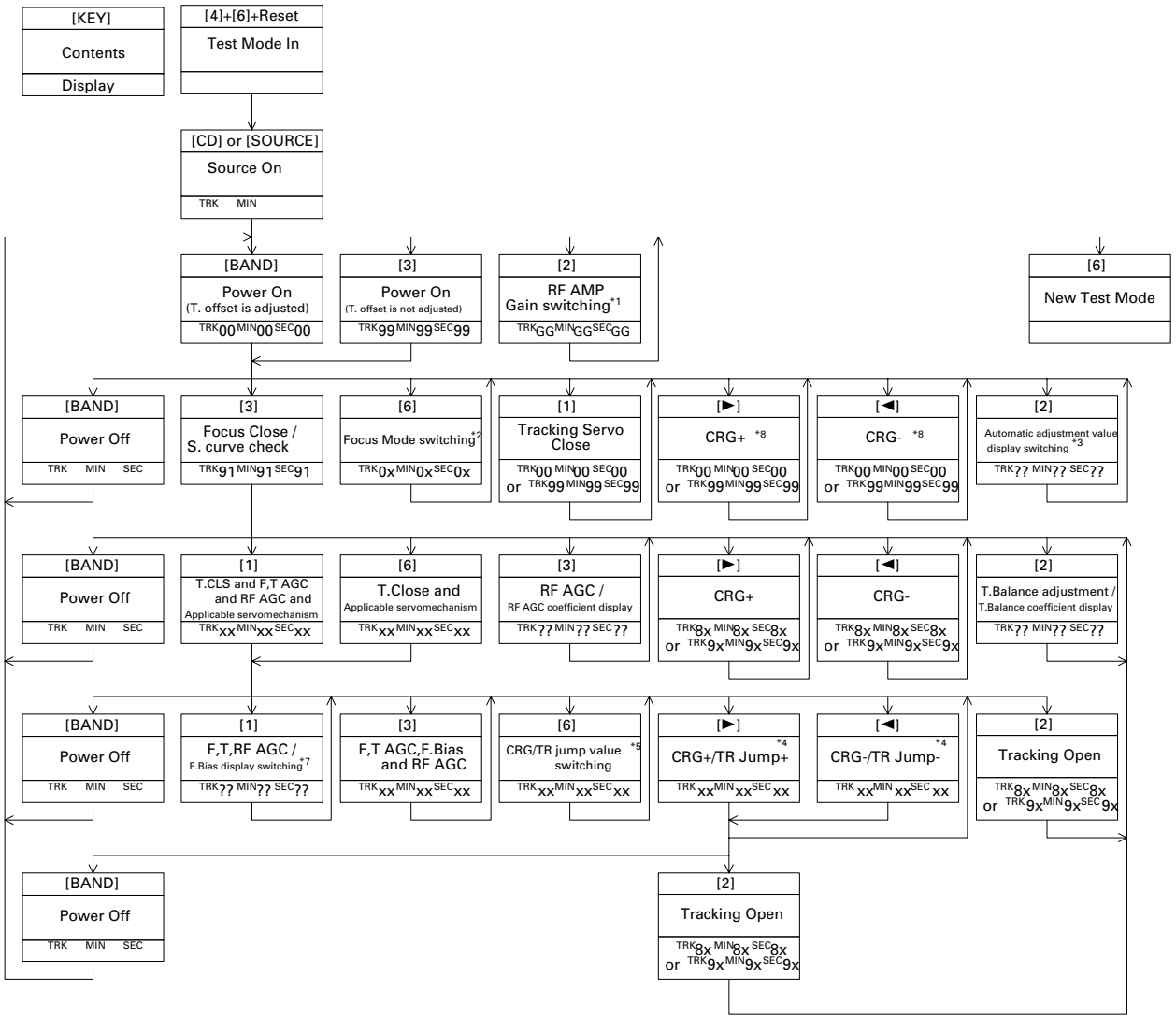
- After pressing the EJECT key, do not press any other key until the disk is completely ejected.

- If the ► or ◄ key is pressed while focus search is in progress, immediately turn the power off (otherwise the actuator may be damaged due to adhesion of the lenses).

- Jump operation of TRs other than 100TR continues after releasing the key. CRG move and 100TR jump operations are brought into the “Tracking close” status when the key is released.

- Powering Off/On resets the jump mode to “Single TR(91)”, the RF AMP gain setting to 0 dB, and the automatic adjustment value to the initial value.

● Flow Chart



*1) TYP (TRK MIN SEC) → +12dB (TRK12 MIN12 SEC12)

*2) Focus Close setting (TRK00 MIN00 SEC00 or TRK99 MIN99 SEC99) → S. curve check setting (TRK01 MIN01 SEC01) → F. EQ measurement setting (TRK02 MIN02 SEC02)

*3) F.Offset Display → T.Offset Display → Switch to the order of the original display

*4) 1TR/32TR/100TR

*5 Single TR (TRK91 MIN91 SEC91 or TRK81 MIN81 SEC81) → 32TR (TRK92 MIN92 SEC92 or TRK82 MIN82 SEC82) → 100TR (TRK93 MIN93 SEC93 or TRK83 MIN83 SEC83) → CRG Move (TRK94 MIN94 SEC94 or TRK84 MIN84 SEC84)

*6) Only at the time of CRG move or 100TR jump

*7) TRK/MIN/SEC → F.AGC Gain → T.AGC Gain → F.Bias → RF AGC Gain

*8) CRG motor voltage = 2 [V]

[Key]	Operation	
	Test Mode	New Test Mode
[BAND]	Power On/Off	Error occurrence time/ cause display switching
[►]	CRG +/TR Jump+ (Direction of the external surface)	TRK+/FF
[◄]	CRG -/TR Jump- (Direction of the internal surface)	TRK-/REV
[1]	T.CLS and AGC and Applicable servomechanism/ AGC,AGC display switching	SCAN
[2]	RF Gain switching/Offset adjustment display/ T.Balance adjustment/T.OPN	MODE
[3]	F.CLS,S.Curve/Rough Servo and RF AGC/ F,T,RF AGC	(ITP)
-	SPDL 1X/2X switching (Double-speed compatibility only)	-
-	Error rate measurement	-
[6]	F.Mode switching/T.CLS/CRG,TR Jump switching	Auto/Manual switching

6.3 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

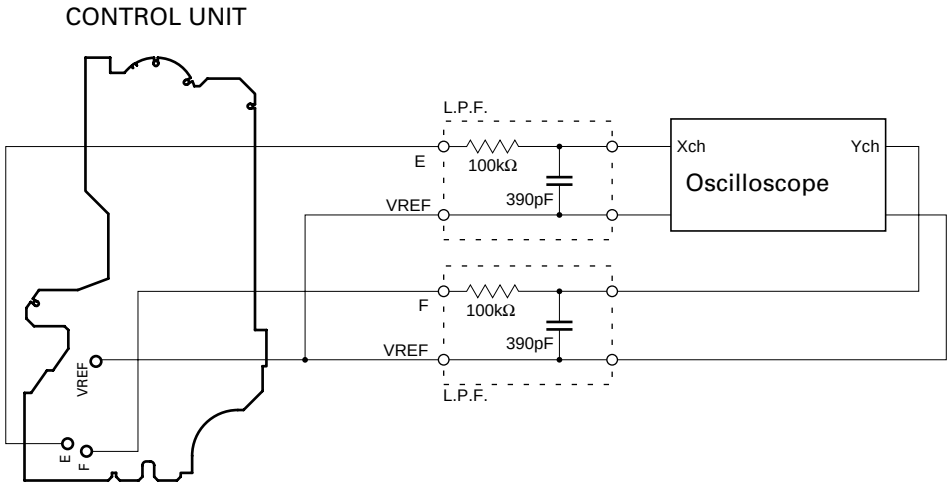
• **Note :**
The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

• **Purpose :**
To check that the grating is within an acceptable range when the PU unit is changed.

• **Symptoms of Mal-adjustment :**
If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• **Method :**

• Measuring Equipment	• Oscilloscope, Two L.P.F.
• Measuring Points	• E, F, VREF
• Disc	• ABEX TCD-784
• Mode	• TEST MODE



• **Checking Procedure**
1. In test mode, load the disc and switch the 5V regulator on.
2. Using the ► and ◄ buttons, move the PU unit to the innermost track.
3. Press key **3** to close focus, the display should read "91". Press key **2** to implement the tracking balance adjustment the display should now read "81". Press key **3**. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

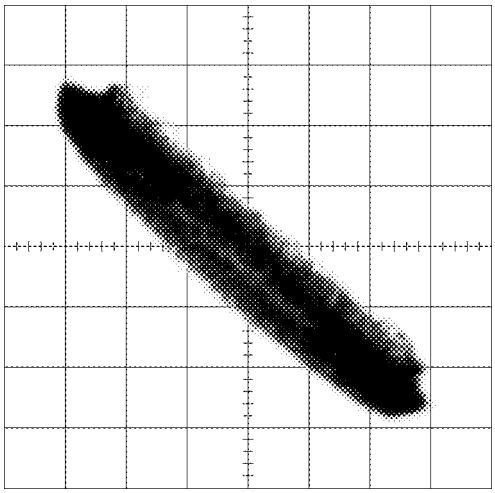
• **Note**
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• **Hint**
Reloading the disc changes the clamp position and may decrease the "wobble".

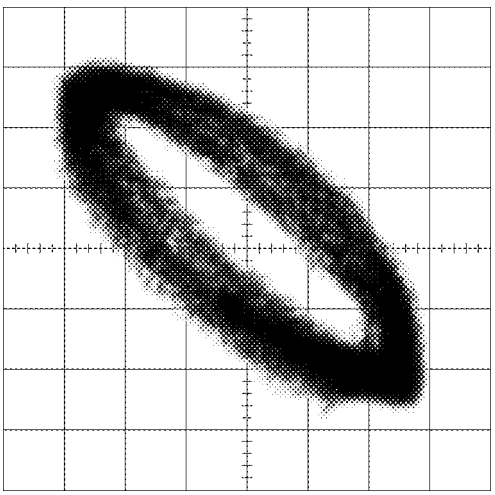
Grating waveform

Ech → Xch 20mV/div, AC
Fch → Ych 20mV/div, AC

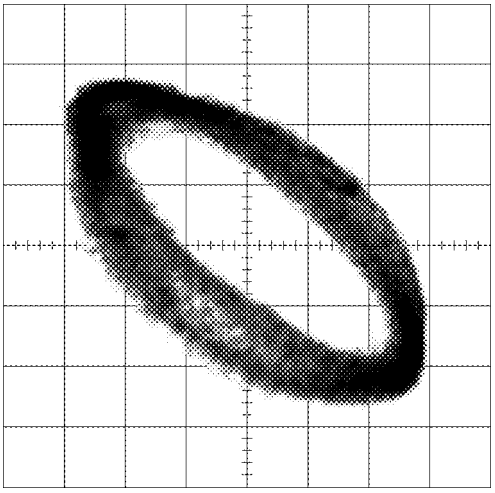
0°



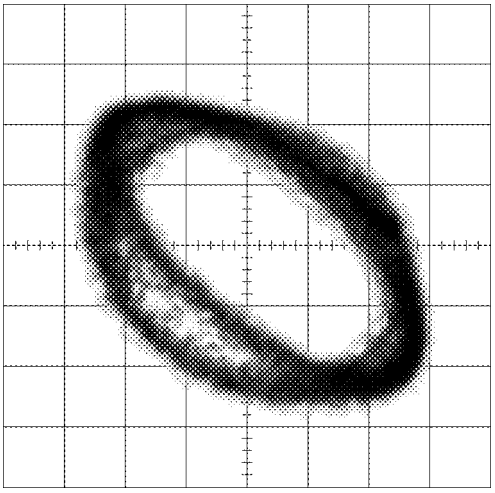
30°



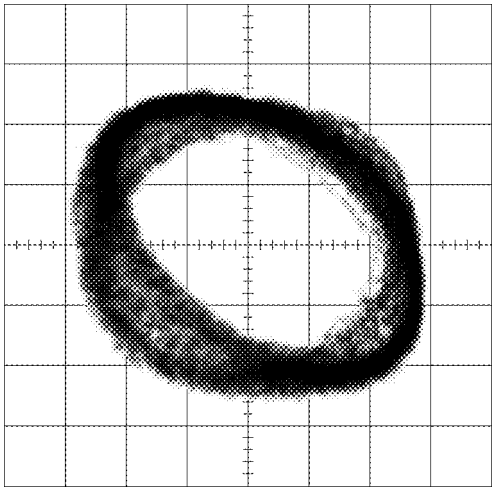
45°



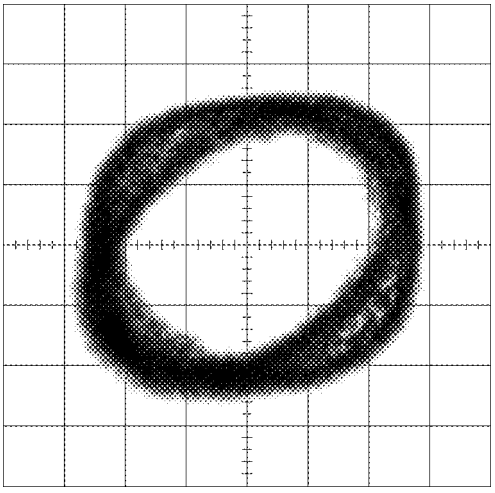
60°



75°



90°



7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TEST MODE

● Error Messages

If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.

8-digit display	6-digit display	4-digit display
ERROR–xx	ERR–xx	E–xx

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG SERVO LSI Communication Error	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism. Communication error between microcomputer and SERVO LSI.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG Subcode NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations. A disc not containing CD-R data is found. Turned over disc are found, though rarely. CD signal error.
17	Electricity	Setup NG	AGC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations on REWRITABLE.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
44	Electricity	ALL Skip	Skip setting for all track. (CD-R/RW)
50	Mechanism	CD On Mech Error	Mechanical error during CD ON. → Defective loading motor, mechanical lock and mechanical sensor.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, Ax: Other errors.

● New Test Mode

S-CD plays the same way as before.

If an error such as off focus, spindle unlocking, unreadable sub-code, or sound skipping occurs after setup, its cause and time occurred (in absolute time) are displayed.

During setup, operational status of the control software is displayed.

These displays and functions are prepared for enhancing aging in the servicing and efficiency of trouble analysis.

(1) Shifting to the New Test Mode

① Turn on the current test mode by starting the reset from the key.

② Select S-CD for the source through the specified procedure including use of the [SOURCE] key, and inserting the disc. Then, press the [Jump Mode Selector] key while maintaining the regulator turned off.

③ After the above operations, the new test mode remains on irrespective of whether the S-CD is turned on or off. You can reset the new test mode by turning on the reset start.

(2) Key Correspondence

Key	Test mode		New test mode	
	Regulator Off	Regulator On	In-play	Error Production
BAND	To regulator on	To regulator off	–	Time/Err.No. switching
►	–	FWD-Kick	FF/TR+	–
◄	–	REV-Kick	REV/TR-	–
1	–	Tracking Close	Scan	–
2	–	Tracking Open	Mode	–
3	–	Focus Close	–	–
–	–	Focus Open	–	–
–	–	Jump Off	–	–
6	To new test mode	Jump mode switching	Auto/Manu	–

Note: Eject and CD on/off is performed in the same procedure as that for the normal mode.

(3) Cause of Error and Error Code

Code	Class	Contents	Description and cause
40	Electricity	Off focus detected.	FOK goes low. → Damages/stains on disc, vibrations or failure on servo.
41	Electricity	Spindle unlocked.	LOCK = Low continued for 150 msec. → Damages/stains on disc, vibrations or failure on servo.
42	Electricity	Sub-code unreadable.	Sub-code was unreadable for 500 msec. → Damages/stains on disc, vibrations or failure on servo.
43	Electricity	Sound skipping detected.	Last address memory function was activated. → Damages/stains on disc, vibrations or failure on servo.

Note: Mechanical errors during aging are not displayed.

(4) Display of Operational Status during Setup

Status No.	Contents	Protective action
21	Focus search start	Focus search timeout.
22	Focus search 2	Focus search timeout.
23	Focus search 3	Focus search timeout.
24	Focus search 4	Focus search timeout.
25	Focus search(Setup protection)	Focus slips off.
26	Focus search(Fast recovery)	Focus slips off.
27	RF detection	Focus slips off.
28	Spindle rough servocontrol	Focus slips off.
29	Tracking balance adjustment start	Focus slips off.
30	Tracking balance adjustment 2	Focus slips off.
31	Tracking balance adjustment 3	Focus slips off.
32	Tracking close start(Spindle stationary servocontrol setting)	Focus slips off.
33	Tracking close 2	Focus slips off.
34	Tracking close 3	Focus slips off.
35	Focus/Tracking AGC start	Focus slips off.
36	Focus/Tracking AGC 2	Focus slips off.
37	Focus/Tracking AGC 3	Focus slips off.
38	Focus/Tracking AGC 4	Focus slips off.
39	Focus/Tracking AGC 5	Focus slips off.
40	Focus/Tracking AGC 6	Focus slips off.
41	Focus/Tracking AGC 7	Focus slips off.
42	Focus/Tracking AGC 8	Focus slips off.
43	FE bias start	Focus slips off.
44	FE bias 2	Focus slips off.
45	RF AGC start	Focus slips off.
46	RF AGC 2	Focus slips off.
47	Lock check start	Focus slips off.
48	Lock is being checked	Focus slips off.
49	Subcode check start	Focus slips off, spindle lock is not performed.
50	Subcode is being checked	Focus slips off, no subcode can be read.

(5) Display Examples

1) During Setup

8-digit display, 6-digit display	4-digit display(Auto setting)	4-digit display(Manual setting)
TNO. Min Sec	TNO.	Min Sec
11 11' 11"	11	11' 11"

2) During Operation (TOC read, TRK search, Play, FF and REV)

The same as in the normal mode.

3) When a Protection Error Occurred

(A) Error display ((A)←→(B), (C) : BAND key)

8-digit display	6-digit display	4-digit display
ERROR-xx	ERR-xx	E-xx

(B) Error occurrence timing display in track no. ((B)←→(C) : Auto/Manual key)

8-digit display, 6-digit display	4-digit display(Auto setting)
TNO. Min Sec	TNO.
10 40' 05"	10

(C) Error occurrence timing display in absolute time. ((B)←→(C) : Auto/Manual key)

8-digit display, 6-digit display	4-digit display(Manual setting)
TNO. Min Sec	Min Sec
10 40' 05"	40' 05"

7.1.2 DISASSEMBLY

● **Removing the Case Unit(not shown)**

1. Remove the Case Unit.

● **Removing the CD Mechanism Module (Fig.1)**

1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module.

● **Removing the Grille Panel Assy (Fig.1)**

2 Remove the two screws and then remove the Grille Panel Assy.

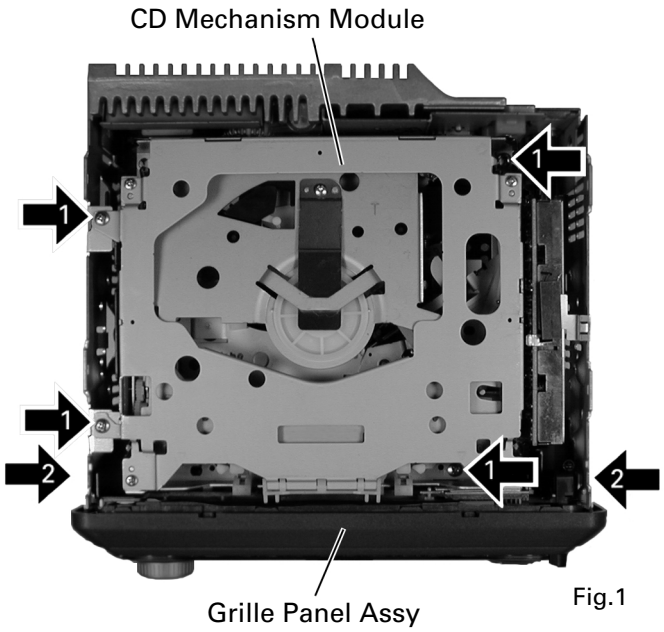


Fig.1

● **Removing the Tuner Amp Unit (Fig.2)**

1 Remove the two screws.

2 Straight the tabs at three locations indicated.

3 Remove the screw.

4 Remove the three screws and then remove the Tuner Amp Unit.

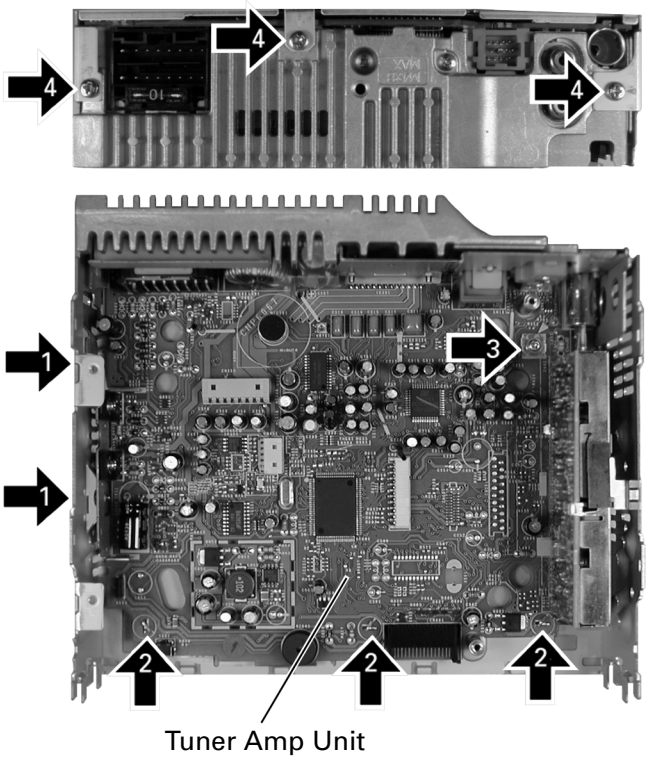


Fig.2

● Removing the OEL Unit

1. Apply hot air to the cable pins for the anode terminal using a blower used for removing a flat-packaged IC or something like that. When all the pins are peeling off from the PCB, pinch the cable with a pair of tweezers and remove it slowly from the PCB. (Fig.3)

* Be careful not to remove other electrical parts when you use a blower. Especially, when hot air is appropriated to the VR1902 too much, the volume will destroy.

* Flexible cable may not remove easily by transforming the Bosses by the hot air of the Blower.

2. Five tabs are extended until becoming straight in the direction of the arrow and then remove the Holder. (Fig.3)
3. Slowly set up the OEL Unit. At this time, the stress is prevented from hanging to flexible cable in the Cathode terminal. (Fig.4)
4. The Cathode terminal is removed according to the procedure same as the Anode terminal, and the OEL Unit is removed. (Fig.4)
5. Remove the Holder. (Remove after removing the Cathode terminal without fail.) (Fig.4)

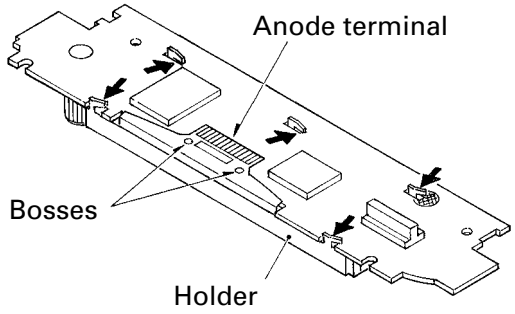


Fig.3

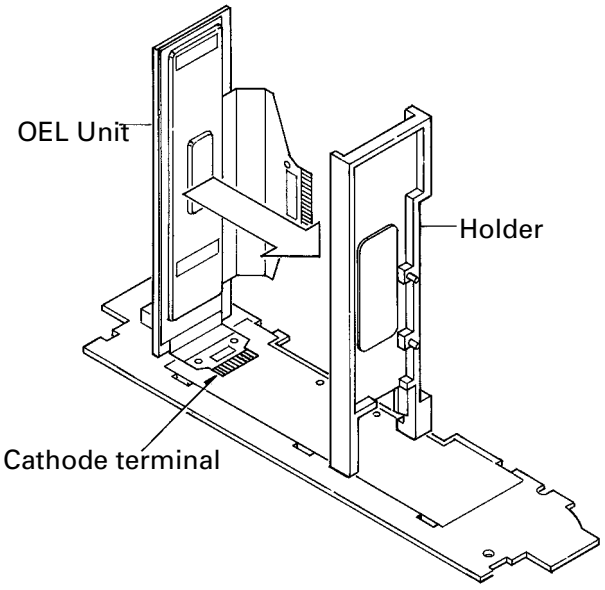


Fig.4

● Installing the OEL Unit

1. Install the Holder in the OEL Unit. (Fig.5)
2. When soldering the flexible cable for the Cathode terminal on the PCB, use a pair of tweezers. First, insert the tips of tweezers into 2 holes in the flexible cable, then into the 2 holes in the PCB. (Fig.5)
3. Position the flexible cable on the PCB so that their lands touch each other. (Fig.5)
4. Apply solder to each pin of the flexible cable. (Fig.5)

* Appropriate soldering iron lightly so that the stress should not hang to Flexible cable.

5. Lay down the OEL Unit. (Fig.5)
6. Install the Holder. (Fig.3)
7. When soldering the flexible cable for the Anode terminal on the PCB, first, insert the Bosses on the PCB into the 2 holes in the flexible cable. Then, take the same procedures 2 and 3 as that for the Cathode terminal to solder the cable pins. (Fig.3)

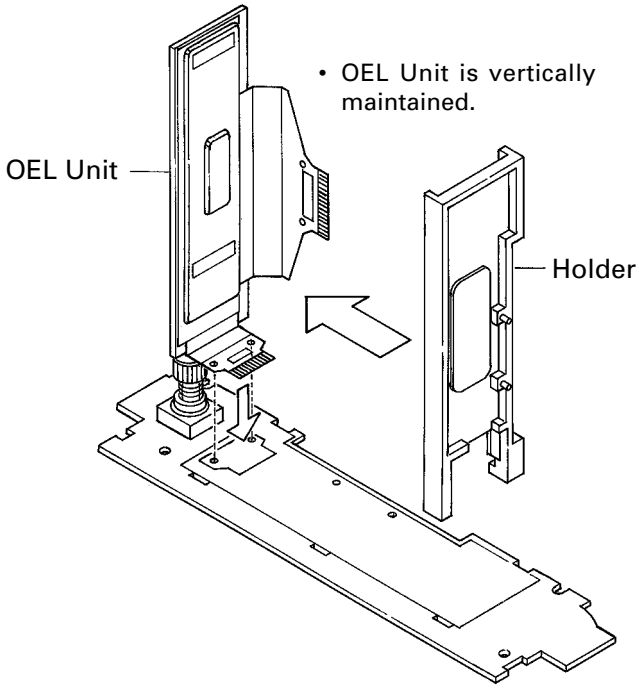
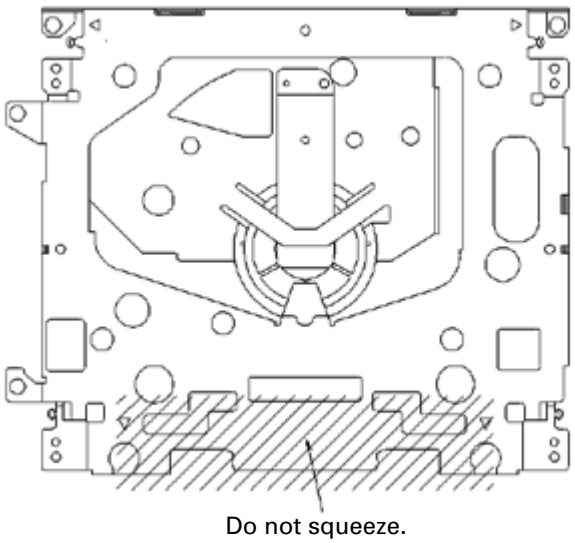


Fig.5

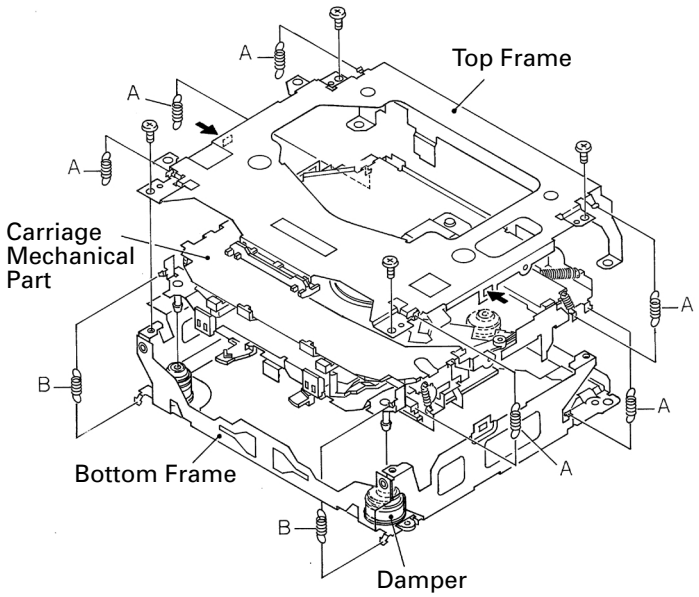
● How to hold the Mechanical Unit

1. Hold the top and bottom frame.
2. Do not squeeze top frame's front portion too tight, because it is fragile.



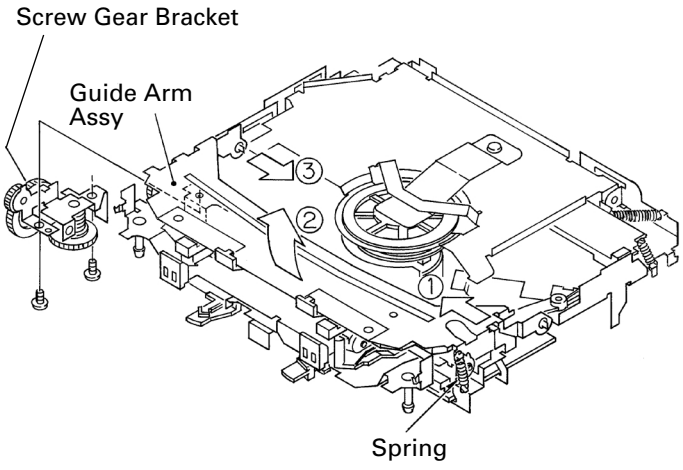
● How to remove the Top and Bottom Frame

1. When the disk is "clamp" state, unlock Spring A (6 pieces) and Spring B (2 pieces), and unscrew screws (4 pieces).
2. Unlock each 1 of pawl at the both side of the frame, then remove the top frame.
3. Remove the Carriage Mechanical part in such way that; you remove the mechanical part from 3 pieces of Damper while slowly pulling up the part.
4. Now, the top frame has been removed, and under this state, fix the genuine Connector again, and eject the disk.
   (Caution)
   When you reassemble the Carriage Mechanical part, apply a bit of alcohol to Dampers.



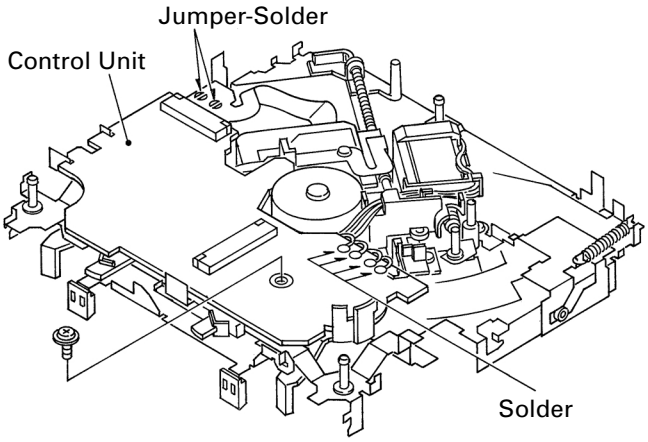
● How to remove the Guide Arm Assy

1. Unlock the spring (1 piece) at the right side of the assembly.
2. Unscrew screws (2 pieces), then remove the Screw Gear Bracket.
3. Shift the Guide Arm Assy to the left and slowly rotate it to the upper direction.
4. When the Guide Arm Assy rotates approximately 45 degree, shift the Assy to the right side direction and remove it.



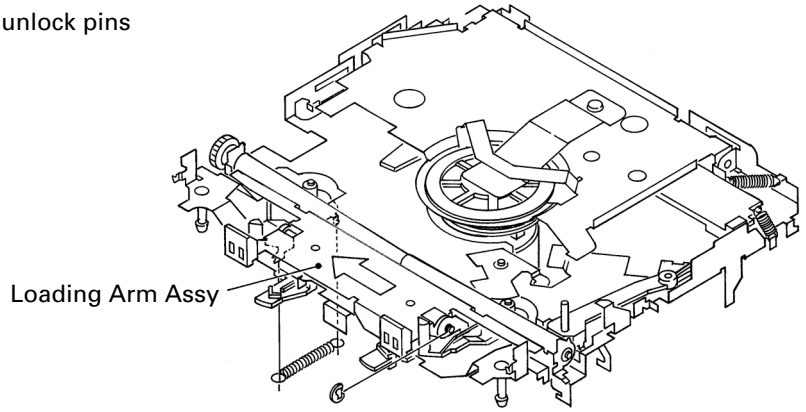
● How to remove the Control Unit

1. Give jumper-solder treatment to the Flexible Wire of the Pickup unit, then remove the wire from the Connector.
2. Remove all 4 points of solder-treatment on the Lead Wire. Also, unscrew the screw(1 piece).
3. Then, Remove the Control unit.
   (Caution)
   Be careful not to damage SW when you reassemble the Control Unit into the device.



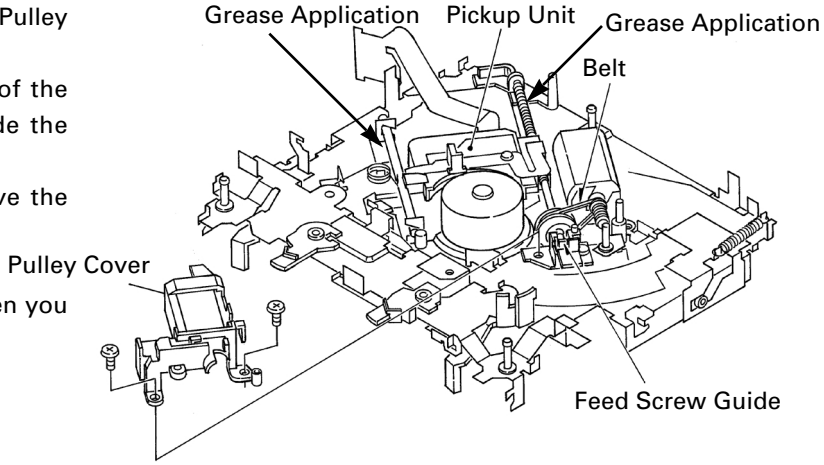
● How to remove the Loading Arm Assy

1. Unlock the spring (1 piece) and remove the E ring (1 piece) of the Fulcrum Shaft.
2. Shift the arm to the left side direction and unlock pins (2 pieces).



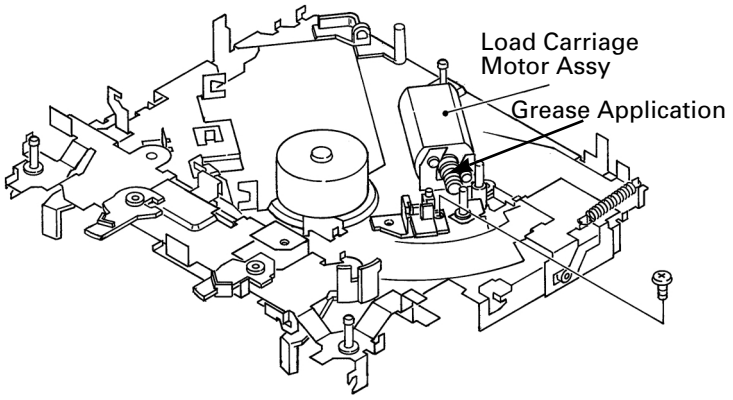
● How to remove the Pickup Unit

1. Unscrew 2 pieces of screws, then remove the Pulley Cover.
2. Remove the Feed Screw unit from the pawl of the Feed Screw Guide (The pawl is located inside the guide).
3. Remove the belt from the Pulley, then remove the Pickup unit.
   (Caution)
   Make sure not to stain the belt with grease when you fix the belt.



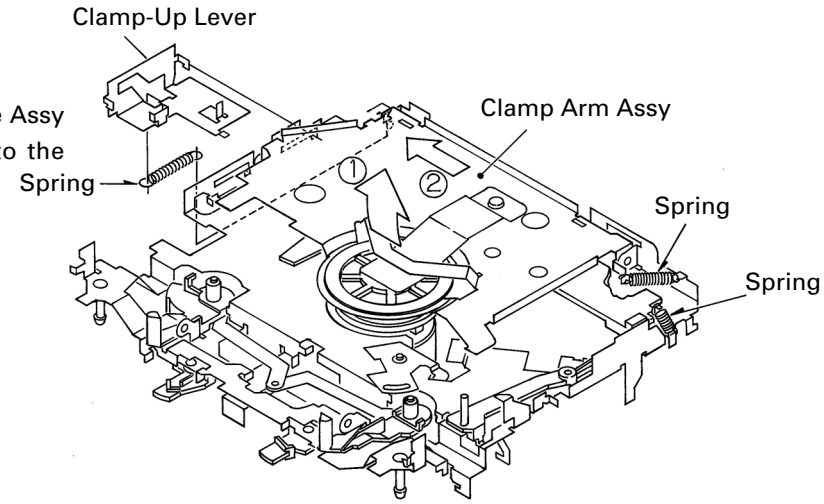
● How to remove the Load Carriage Motor Assy

1. Unscrew the screw (1 piece).
2. Remove the Load Carriage Motor Assy.



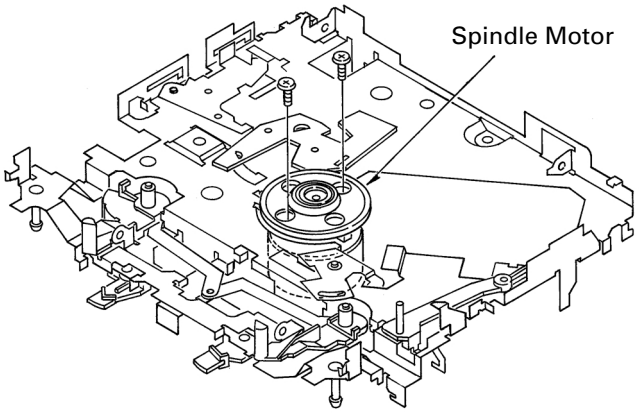
● How to remove the Clamp Arm Assy

1. Unlock springs (3 pieces).
2. Remove the Clamp-Up Lever.
3. Remove the Assy in such way that; you shift the Assy to the left side direction while you rotate it to the upper direction slowly.

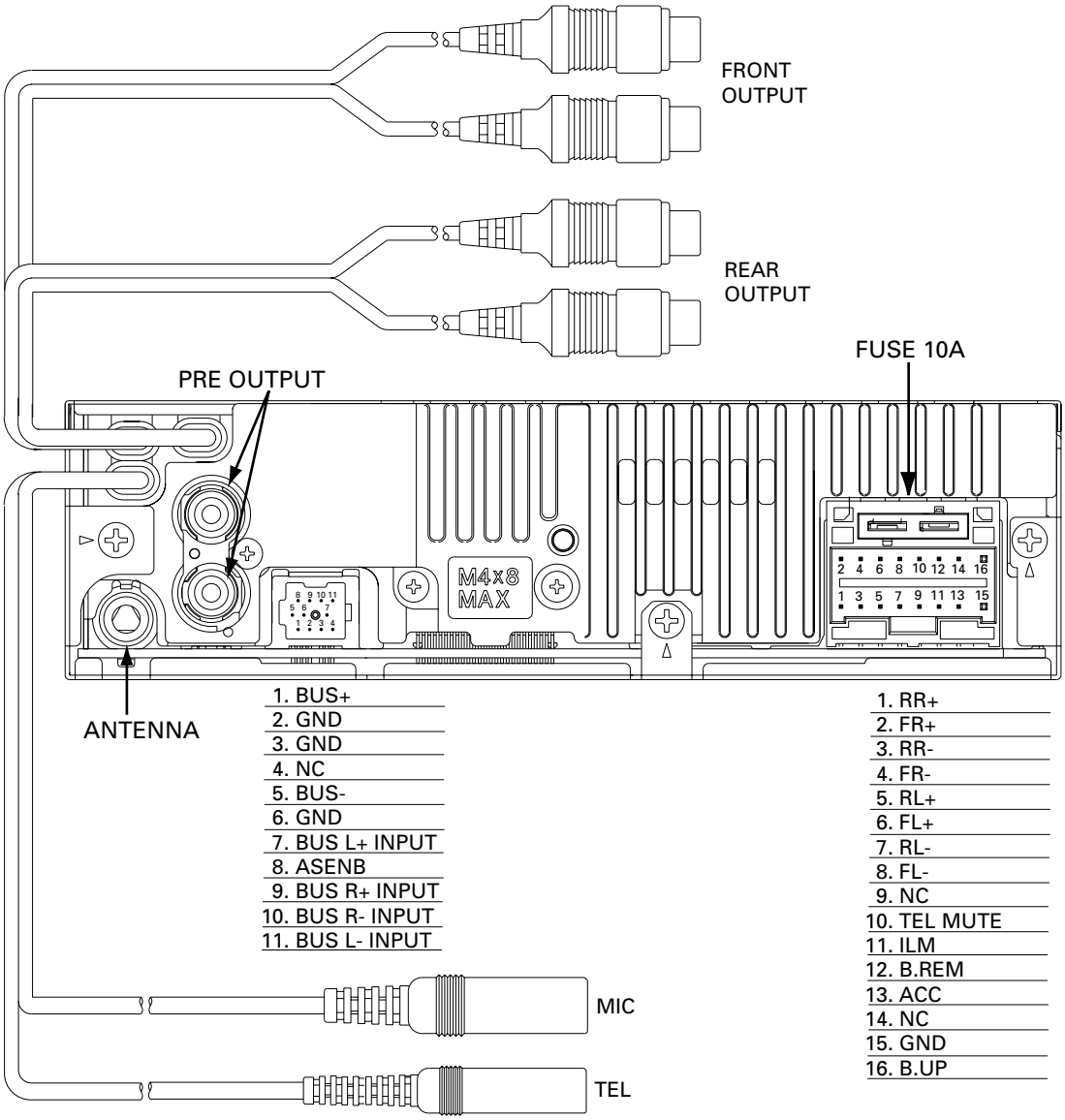


● How to remove the Spindle Motor

1. Unscrew 2 pieces of screws. Then you can remove the motor.



7.1.3 CONNECTOR FUNCTION DESCRIPTION



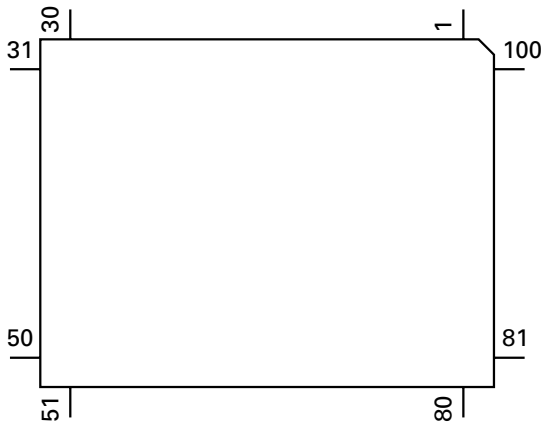
7.2 IC

● **Pin Functions (PD5615A)**

Pin No.	Pin Name	I/O	Function and Operation
1	TUNPDO	SIO	TUNER:Data output(PLL)
2	TUNPCK	SIO	TUNER:Clock output(PLL)
3	EMUTE	O	EVOL:Mute output
4	VST	O	EVOL:Strobe output
5	VDT	O	EVOL:Data output
6	NC		Not used
7	VCK	O	EVOL:Clock output
8	BYTE		Vss
9	CNVSS		Vss
10	TELIN	I	TEL:Cellular mute input
11	HTELPW	O	TEL:Microphone control output
12	RESET		Reset input(RESET)
13	XOUT		Clock output
14	VSS		Power supply input(Vss)
15	XIN		Clock input
16	VCC		Power supply input(Vcc)
17	NC		Not used(Vcc)(Pull up)
18	NC		Not used
19	NC		Not used
20	DALMON	O	DFS alarm output
21	RX2	I	IPBUS:Input 2
22	OELPW	O	OEL power supply output
23	SYSPW	O	System power control output
24	PEE	O	Beep tone output
25	NC		Not used
26	NC		Not used
27	NC		Not used
28	NC		Not used
29	RX	I	IPBUS:Input
30	TX	O	IPBUS:Output
31	NC		Not used(OPEN)
32	CONT	O	S9:Servo driver control output
33	CLCONT	O	S9:Driver input switch output
34	VDCONT	O	S9:VD power supply control output
35	DPDT	SIO	GRILL:Data output
36	KYDT	SIO	GRILL:Data input
37, 38	ROT1, 0	I	Rotary encoder pulse input 1, 0
39	PCL	O	Clock adjustment output
40	SWVDD	O	GRILL:Chip enable output
41	$\overline{\text{DSENS}}$	I	Detach sense input
42	FLPILM	O	Inside of flap illumination output
43	ILMPW	O	Illumination output
44	EJTIN	I	EJECT key input
45	NC		Not used
46	NC		Not used
47	NC		Not used
48	NC		Not used
49	$\overline{\text{ST}}$	I	TUNER:Stereo input
50	SD	I	TUNER:SD input
51	NC	I	Not used
52	NC	O	Not used
53	NC	I	Not used
54, 55	NC		Not used(OPEN)
56	CD5VON	O	S9:Power supply control output
57	HOME	I	S9:CRG HOME detection input
58	CDLOEJ	O	S9:Load Motor Load/Eject output
59-61	XPIO3-1	I/O	S9:LSI data input/output 3-1

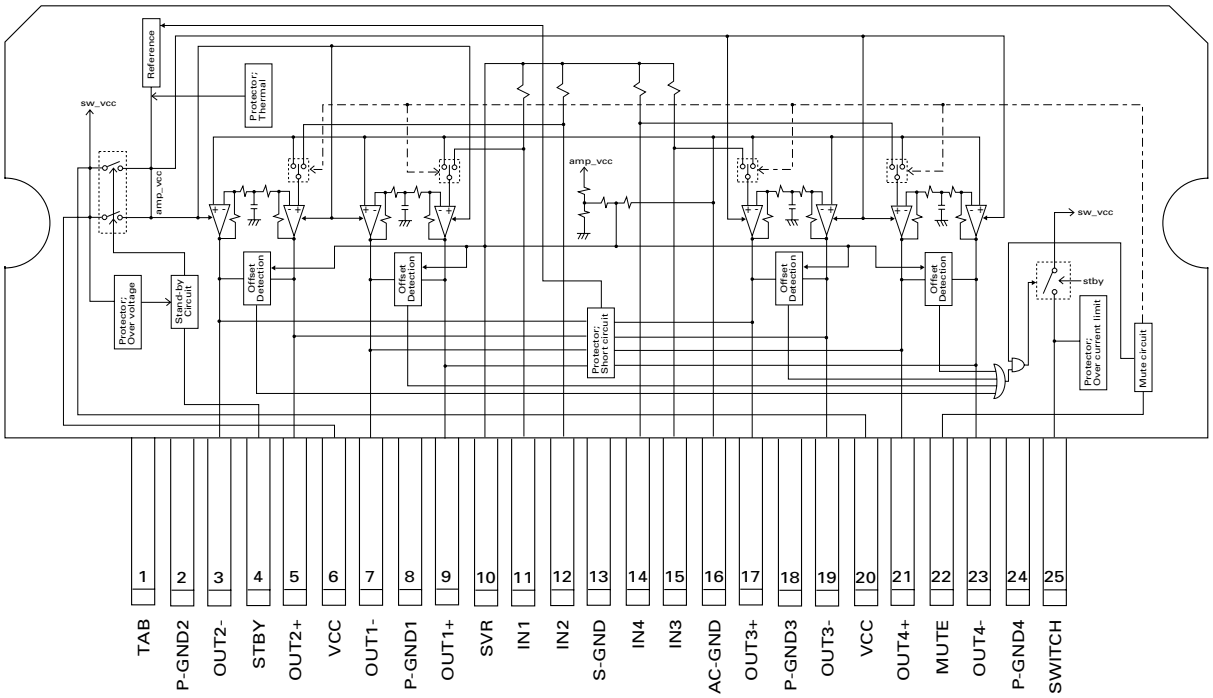
Pin No.	Pin Name	I/O	Function and Operation
62	VCC		Power supply input(Vcc)
63	XPIO0	I/O	S9:LSI data input/output 0
64	VSS		Power supply input(Vss)
65	XPCK	O	S9:LSI clock output
66	$\overline{\text{XCE}}$	O	S9:LSI chip enable output
67	$\overline{\text{XRST}}$	O	S9:LSI reset output
68, 69	NC		Not used(OPEN)
70	$\overline{\text{HTELM}}$	O	TEL:Mute output for handsfree
71	$\overline{\text{TUNPCE2}}$	O	TUNER:Chip enable output(EEPROM)
72	TUNPCE	O	TUNER:Chip enable output(PLL)
73	$\overline{\text{BSENS}}$		Backup sense
74	$\overline{\text{ASENS}}$		ACC sense
75	NC		Not used
76	LOCH	O	TUNER:Local H output
77	LOCL	O	TUNER:Local L output
78-80	SMPXS2-0	O	Spectrum analyzer switch output 2-0
81	IPPW	O	IPBUS:Driver power supply control output
82	ASENBO	O	IPBUS:Slave ACC sense output
83	$\overline{\text{ISENS}}$	I	Illumination sense input
84, 85	MODEL1, 0	I	Model input 1, 0
86	NC		Not used(open)
87	MUTE	O	Mute output
88	TESTIN	I	Test program input
89	DSCSNS		S9:Disc position detection input
90	VDSENS		S9:VD power supply sense input
91	TEMP		S9:Temperature sense input
92	SAIN		Spectrum analyzer input
93	$\overline{\text{CSENS}}$		Flap open/close sense input
94	ASLIN		CAP4:ASL input
95	NC		Not used
96	AVSS		AD converter power supply input(Vss)
97	SL		TUNER:Signal level input
98	VREF		AD converter reference voltage(Vref)
99	AVCC		AD converter power supply input(Vcc)
100	NC	I	Not used

*PD5615A



IC's marked by* are MOS type.
Be careful in handing them because they are very liable to be damaged by electrostatic induction.

PAL006A



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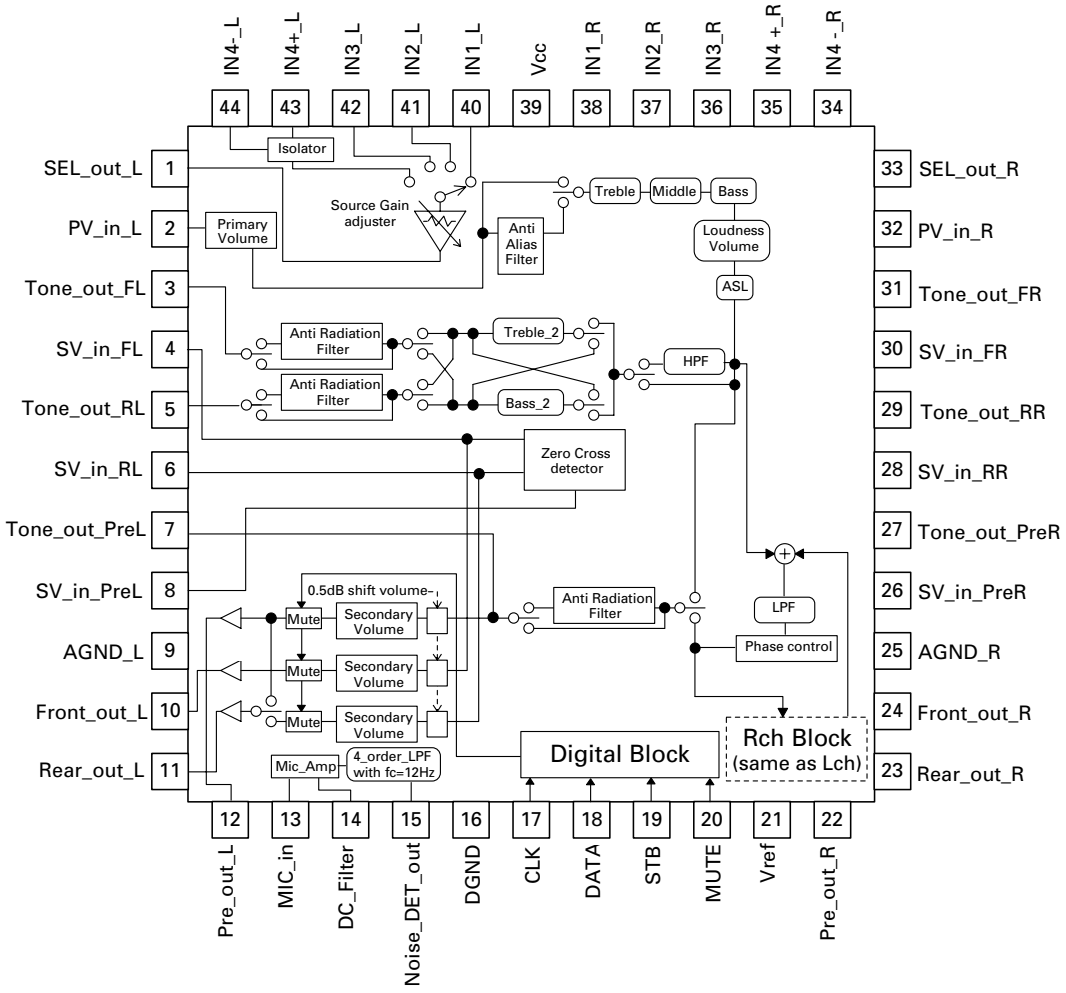
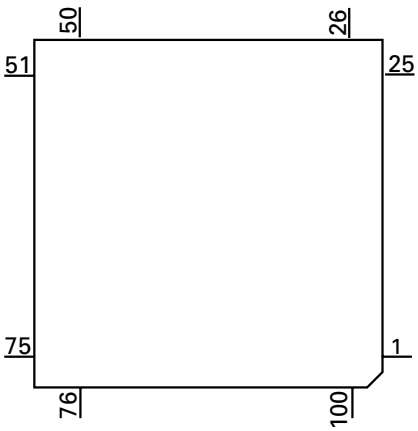


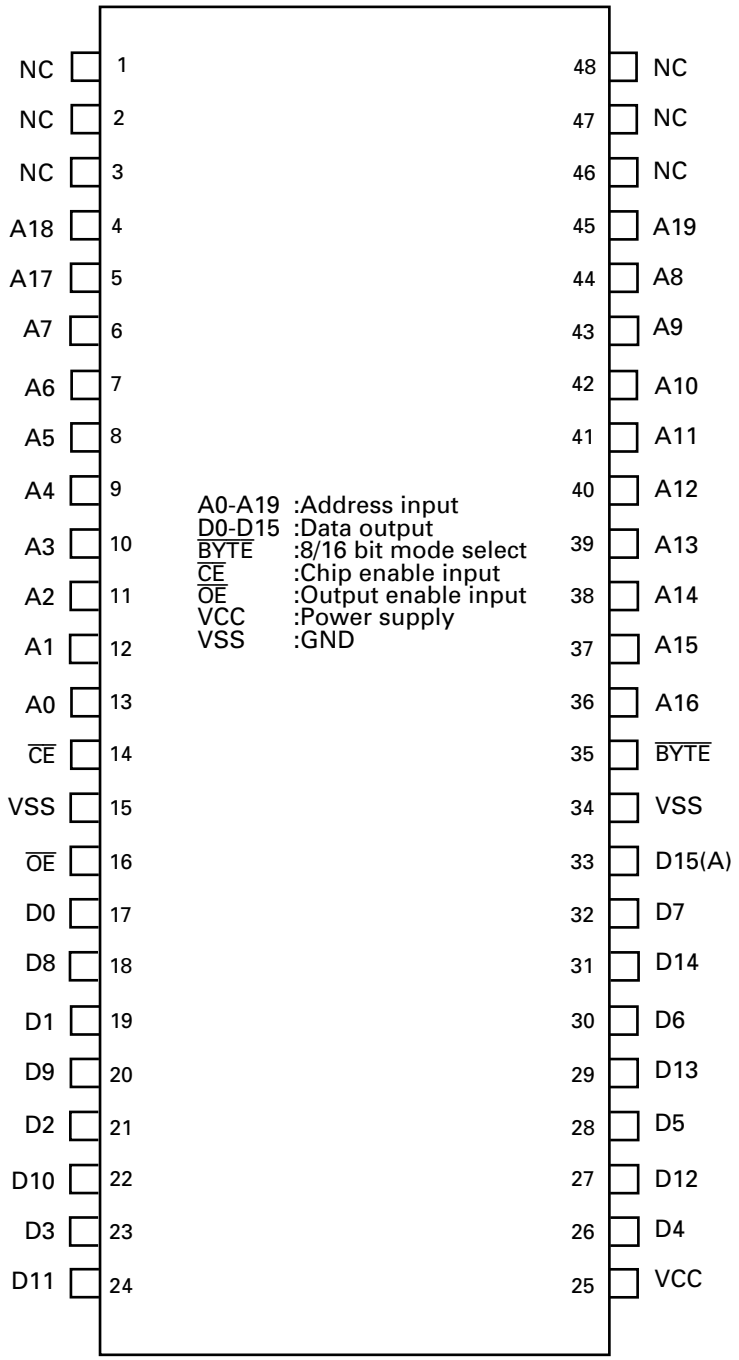
● **Pin Functions (PD5627A)**

Pin No.	Pin Name	I/O	Function and Operation
1-4	NC		Not used OPEN
5	$\overline{\text{REM}}$	I	Remote control reception
6	BYTE	I	GND connection
7	CNVSS	I	GND connection
8, 9	NC		Not used OPEN
10	RESET		Pull up
11	XOUT	O	Crystal oscillating element connection pin
12	VSS		VSS connection
13	XIN	I	Crystal oscillating element connection pin
14	VDD		VDD connection
15	NMI	I	Pull up
16	NC		Not used OPEN
17-20	$\overline{\text{KD1}}$-$\overline{4}$	I	Key data 1-4
21-26	$\overline{\text{KS1}}$-$\overline{6}$	I/O	key strobe
27-31	NC		Not used OPEN
32	ILMD	O	Dual illumination
33	$\overline{\text{KYDT}}$	O	Key data communication
34	$\overline{\text{DPDT}}$	I	Display data communication
35	NC		Not used OPEN
36	OEL	O	OEL controller ON
37	NC		Not used Pull up
38	NC		Not used OPEN
39	HOLD	I	Pull up
40	HLDA	O	OPEN
41	BCLK	O	Bus clock
42	$\overline{\text{RD}}$	O	Read strobe
43	BHE	O	OPEN
44	$\overline{\text{WR}}$	O	Write strobe
45	CS3	O	OPEN
46	$\overline{\text{CS2}}$	O	Bank address high
47	$\overline{\text{CS1}}$	O	Bank address low
48	$\overline{\text{CS0}}$	O	External ROM chip select
49-59	A19-9	O	Address bus 19-9
60	VDD		VDD connection
61	A8	O	Address bus 8
62	VSS		GND connection
63-70	A7-0	O	Address bus 7-0
71-86	D15-0	I/O	Data bus 15-0
87-93	NC		Not used OPEN
94	NC		Not used VSS connection
95	NC		Not used OPEN
96	NC		Not used VSS connection
97	NC		Not used VCC connection
98-100	NC		Not used OPEN

*PD5627A



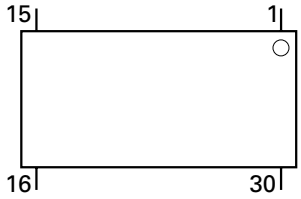
*PD8074A(DEH-P7300/XIN/UC), *PD8086A(DEH-P730/XIN/UC)



● **Pin Functions(TA2153FN)**

Pin No.	Pin Name	I/O	Function and Operation
1	VCC		Power supply voltage terminal
2	RFGC	I	RF amplitude adjustment control signal terminal
3	GMAD	I	AGC amplifier frequency characteristic adjustment terminal
4	FNI	I	Main beam amplifier input terminal
5	FPI	I	Main beam amplifier input terminal
6	TPI	I	Sub beam amplifier input terminal
7	TNI	I	Sub beam amplifier input terminal
8	MDI	O	Monitor photodiode amplifier input terminal
9	LDO	I	Laser diode amplifier output terminal
10	SEL	I	APC circuit ON/OFF signal, LDO terminal control input terminal and bottom and peak detection frequency switching terminals
11	TEB	I	Tracking error balance adjustment signal input terminal
12	2VRO	O	Reference voltage (2VRO) output terminal
13	TEN	I	Tracking error signal generation amplifier reverse phase input terminal
14	TEO	O	Tracking error signal generation amplifier output terminal
15	SBAD	O	Sub beam addition signal output terminal
16	FEO	O	Focus error signal generation amplifier output terminal
17	FEN	I	Focus error signal generation amplifier reverse phase input terminal
18	SEB	I	RFRP generation circuit mode switching terminal
19	VRO	O	Reference voltage (VREF) output terminal
20	RFRP	O	Signal generation amplifier output terminal for track count
21	BTC	I	Bottom detection time constant adjustment terminal for RFCT signal generation
22	RFCT	O	RFRP signal center level output terminal
23	PKC	I	Peak detection time constant adjustment signal for RFCT signal generation
24	RFRPIN	I	Signal generation amplifier input terminal for track count
25	RFGO	O	RF signal amplitude adjustment amplifier output terminal
26	GVSW	I	AGC, FE or TE amplifier gain switching terminal
27	AGCIN	I	RF signal amplitude adjustment amplifier input terminal
28	RFO	O	RF signal generation amplifier output terminal
29	GND	I	GND terminal
30	RFN2	I	RF signal generation amplifier input terminal

TA2153FN

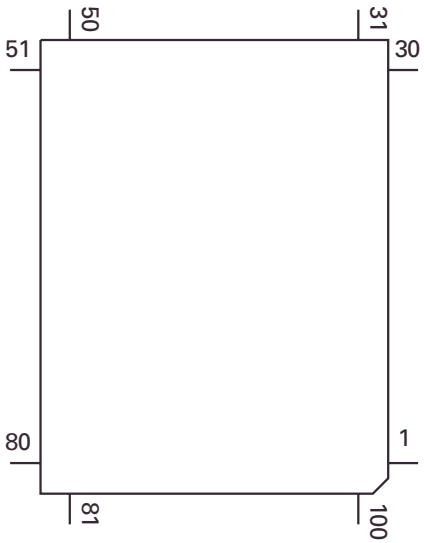


● **Pin Functions(TC9495F2)**

Pin No.	Pin Name	I/O	Function and Operation
1	TESTO		Test mode terminal
2	$\overline{\text{HSO}}$	O	Replay speed flag output terminal
3	$\overline{\text{UHSO}}$	O	Replay speed flag output terminal
4	EMPH	O	Emphasis flag output terminal for sub code Q data
5	LRCK	O	Channel clock (44.1 kHz) output terminal
6	VSS		Digital ground terminal
7	BCK	O	Bit clock output terminal
8	AOUT	O	Digital audio data output terminal
9	DOUT	O	Digital out output terminal
10	MBOV	O	Buffer memory over signal output terminal
11	IPF	O	Correction flag output terminal
12	SBOK	O	CRCC decision result output for sub code Q data
13	CLCK	I/O	Clock input/output terminal for sub code P-W data read
14	VDD		Digital + power supply terminal (5 V)
15	VSS		Digital ground terminal
16	DATA	O	Sub code P-W data output terminal
17	SFSY	O	Replay-system frame sync signal output terminal
18	SBSY	O	Sub code block sync output terminal
19	SPCK	O	Clock for processor status signal read
20	SPDA	O	Processor status signal output terminal
21	COFS	O	Correction-system frame clock (7.35 kHz) output terminal
22	MONIT	O	LSI internal signal output terminal
23	VDD		Digital + power supply terminal (5 V)
24	TESIO0	I	Test input/output terminal
25	P2VREF		PLL-system only 2VREF terminal
26	HSSW	O	The VREF voltage is reached for double or quad speed.
27	ZDET	O	One-bit DAC zero detection flag output terminal
28	PDO	O	Phase error signal issue between the EFM and PLCK signals
29	TMAXS	O	TMAX detection result output terminal
30	TAMX	O	TMAX detection result output terminal
31	LPFN	I	Reverse input terminal of amplifier for lowpass filter
32	LPFO	O	Output terminal of amplifier for lowpass filter
33	PVREF		PLL-system only VREF terminal
34	VCOREF	I	VCO center frequency reference level terminal
35	VCOF	O	Filter terminal for VCO
36	AVSS		Analog-system ground terminal
37	SLCO	O	Output terminal of DAC for data slice level generation
38	RFI	I	RF signal input terminal
39	AVDD		Analog-system power supply terminal (5 V)
40	RFCT	I	RFRP signal center level input terminal
41	RFZI	I	Input terminal for RFRP signal zero cross
42	RFRP	I	RF ripple signal input terminal
43	FEI	I	Focus error signal input terminal
44	SBAD	I	Sub beam addition signal input terminal
45	TSIN	I	Test input terminal
46	TEI	I	Tracking error input terminal
47	TEZI	I	Input terminal for tracking error or zero cross
48	FOO	O	Focus equalizer output terminal
49	TRO	O	Tracking equalizer output terminal
50	VREF		Analog reference power supply terminal
51	RFGC	O	RF amplitude adjustment control signal output terminal
52	TEBC	O	Tracking balance control signal output terminal
53	FMO	O	Feed equalizer output terminal
54	FVO	O	Speed error signal or feed search EQ output
55	DMO	O	Disc equalizer output terminal
56	2VREF		Analog reference power supply terminal
57	SEL	O	APC circuit ON/OFF signal output terminal

Pin No.	Pin Name	I/O	Function and Operation
58-61	FLGA-D	O	External flag output terminal for internal signal monitor
62	VDD		Digital + power supply terminal (5 V)
63	VSS		Digital ground terminal
64	IO0	O	RF amplifier gain switching terminal
65	IO1	O	Not used
66	IO2	I	HOME detection switch input terminal
67	IO3	O	FocusDrv and signal output terminal
68	$\overline{\text{DMOUT}}$	I	Field equalizer PWM output terminal for IO0 and IO1 Disc equalizer PWM output terminal for IO2 and IO3
69	$\overline{\text{CKSE}}$	I	Usually open
70	$\overline{\text{DACT}}$	I	DAC test mode terminal
71	TESIN	I	Test input terminal
72	TESIO1	I	Test input/output terminal
73	VSS		Digital ground terminal
74	PXI	I	DPS-system clock oscillator circuit input terminal
75	PXO	O	DPS-system clock oscillator circuit output terminal
76	VDD		Digital + power supply terminal (5 V)
77	XVSS		Ground terminal for system clock oscillator circuit
78	XI	I	System clock oscillator circuit input terminal
79	XO	O	System clock oscillator circuit output terminal
80	XVDD		For system clock oscillator circuit + power supply terminal
81	DVSR		R channel D/A converting unit power supply terminal
82	RO	O	R channel data forward rotation output terminal
83	DVDD		D/A converting unit power supply terminal (5 V)
84	DVR		Reference voltage terminal
85	LO	O	L channel forward rotation output terminal
86	DVSL		L channel D/A converting unit power supply terminal
87-89	TEST1-3	I	Test mode terminal
90-93	BUS0-3	I/O	Data input/output terminal for microcomputer interface
94	VDD		Digital + power supply terminal (5 V)
95	VSS		Digital ground terminal
96	BUCK	I	Clock terminal for microcomputer interface
97	$\overline{\text{CEE}}$	I	Chip enable signal for microcomputer interface
98	TEST4	I	Test mode terminal
99	$\overline{\text{TSMOD}}$	I	Test mode terminal
100	$\overline{\text{RST}}$	I	Reset signal input terminal

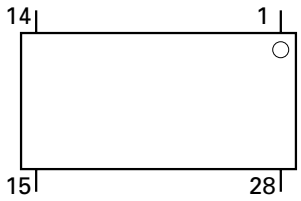
*TC9495F2



● **Pin Functions(BA5996FM)**

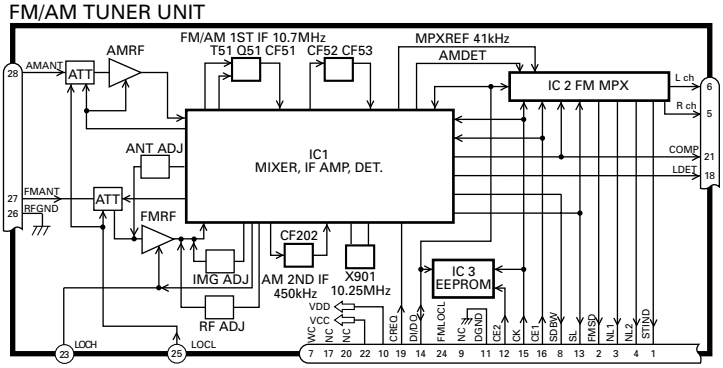
Pin No.	Pin Name	Function and Operation
1	VR	Input pin for reference voltage
2	OPIN2(+)	Input pin for non-inverting input for CH2 preamplifier
3	OPIN2(-)	Input pin for inverting input for CH2 preamplifier
4	OPOUT2	Output pin for CH2 preamplifier
5	OPIN1(+)	Input pin for non-inverting input for CH1 preamplifier
6	OPIN1(-)	Input pin for inverting input from CH1 preamplifier
7	OPOUT1	Output pin for CH1 preamplifier
8	GND	Ground pin
9	MUTE	Mute control pin
10	POWVCC1	Power supply pin for CH1, CH2, and CH3 at "Power" stage
11	VO1(-)	Driver CH1 - Negative output
12	VO1(+)	Driver CH2 - Positive output
13	VO2(-)	Driver CH2 - Negative output
14	VO2(+)	Driver CH2 - Positive output
15	VO3(+)	Driver CH2 - Positive output
16	VO3(-)	Driver CH2 - Negative output
17	VO4(+)	Driver CH4 - Positive output
18	VO4(-)	Driver CH4 - Negative output
19	POWVCC2	Power supply pin for CH4 at "Power" stage
20	GND	Ground pin
21	CNT	Control pin
22	LDIN	Loading input
23	OPOUTSL	Output pin for preamplifier for thread
24	OPINSL	Input pin for preamplifier for thread
25	OPOUT3	CH3 preamplifier output pin
26	OPIN3(-)	Input pin for inverting input for CH3 preamplifier
27	OPIN3(+)	Input pin for non-inverting input for CH3 preamplifier
28	PREVCC	PreVcc

BA5996FM



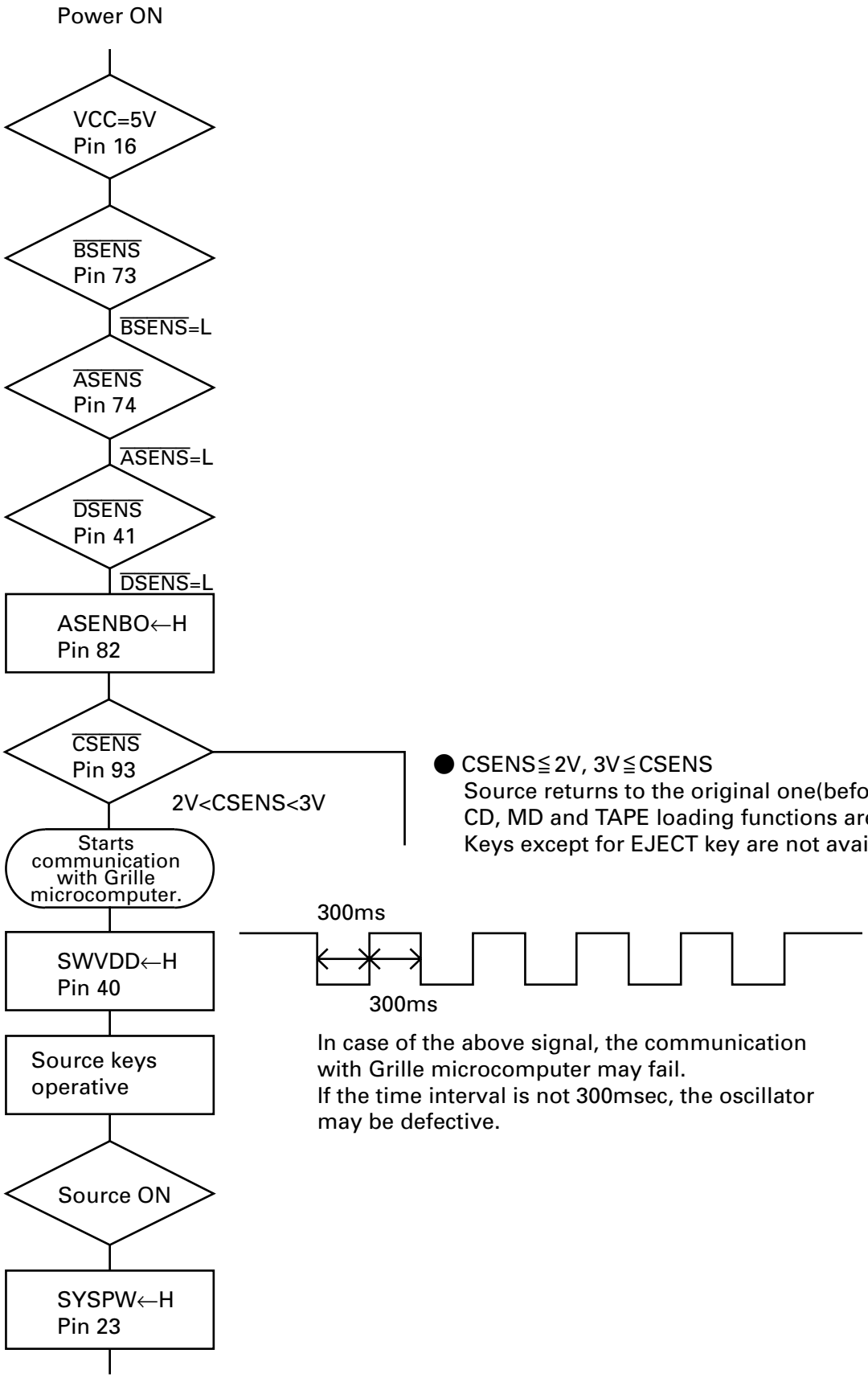
● FM/AM Tuner Unit

FM/AM TUNER UNIT



No.	Symbol	I/O	Explain	
1	STIND	O	stereo indicator	"Low" when the FM stereo signals are received. To be pulled up to the "VDD" at 47kΩ.
2	FMSD	O	FM station detector	"High" when signals are received. To be pulled up to the "VDD" at 47kΩ Meanwhile, 10kΩ should be used when taking diver FIX trigger from here and "High: 0.9VDD or more" and "Low: 250mV or less". (Should satisfy the diver IC specifications)
3	NL1	O	noise level-1	"High" when noise is received. Output for the RDS. GND at 47kΩ //1,800pF.
4	NL2	O	noise level-2	"High" when noise is received. Output for the RDS. GND at 36kΩ //330pF.
5	Rch	O	R channel output	FM stereo "R-ch" signal output or AM audio output. Add the specified di-emphasis constant.
6	Lch	O	L channel output	FM stereo "L-ch" signal output or AM audio output. Add the specified di-emphasis constant.
7	WC		write control	EEPROM write control. Writing permissible at "Low". Normally open.
8	SDBW	O	SD bandwidth	SD bandwidth signal output. For detection of detuning data for the RDS.
9	NC			Not used
10	VDD		power supply	Power supply pin for the digital section. D.C. 5V +/- 0.25V. Be careful about overlapping noise in the logic section.
11	DGND		digital ground	Grounding for the digital section.
12	CE2	I	chip enable-2	EEPROM chip enable. Active a "Low" To be pulled up to the "VDD" at 47kΩ
13	SL	I/O	signal level	Received FM/AM signal level (strength) output. Connect the specified load resistor and capacitor (10k Ω + 39k Ω //4,700pF)
14	DI/DO	I/O	data input/ data output	Data input/Data output To be pulled up to the "VDD" at 47kΩ
15	CK	I	clock	Clock input To be pulled up to the "VDD" at 47kΩ
16	CE1	I	chip enable-1	AF·RF chip enable. Active at "High" To be grounded at 47kΩ
17	NC			Not used
18	LDET	O	lock detector	Active at "Low". To be pulled up to the "VDD" at 47kΩ
19	CREQ	I	current request	Active at "Low". To be grounded at 47kΩ
20	NC			Not used
21	COMP	O	composite signal	FM composite signal output. r out < 100Ω
22	VCC		power supply	Analog section power supply pin.D.C.8.4V +/- 0.3V
23	LOCH	I	local high	FM local high pin. When seeking local high, apply 5V together with "LOCL".
24	FMLOCL	I	FM local low	FM local low pin. When seeking local low, apply 5V to the base of the NPN transistor with which the specified resistor is being connected to the emitter. Keep it open in case of ordinary marketed models.
25	LOCL	I	local low	FM/AM local low pin. When seeking local low, apply 5V to the base of the NPN transistor. Since this pin is exclusive for AM when the FMLOCL is in use, do not drive it under FM.
26	RFGND		RF ground	Grounding for the antenna section.
27	FMANT	I	FM antenna input	FM antenna input. 75Ω. Serge absorber (DSP-201M-S00B) is necessary.
28	AMANT	I	AM antenna input	AM antenna input. High impedance. Connect to the antenna through an L (LAU type) of 4.7µH.To cope with the power transmission line hums, insert a series circuit consisting of an L (a coil of about 100mH) + R (a resistor of 470 Ω to 2.2kΩ) between the GND.

7.3 OPERATIONAL FLOW CHART

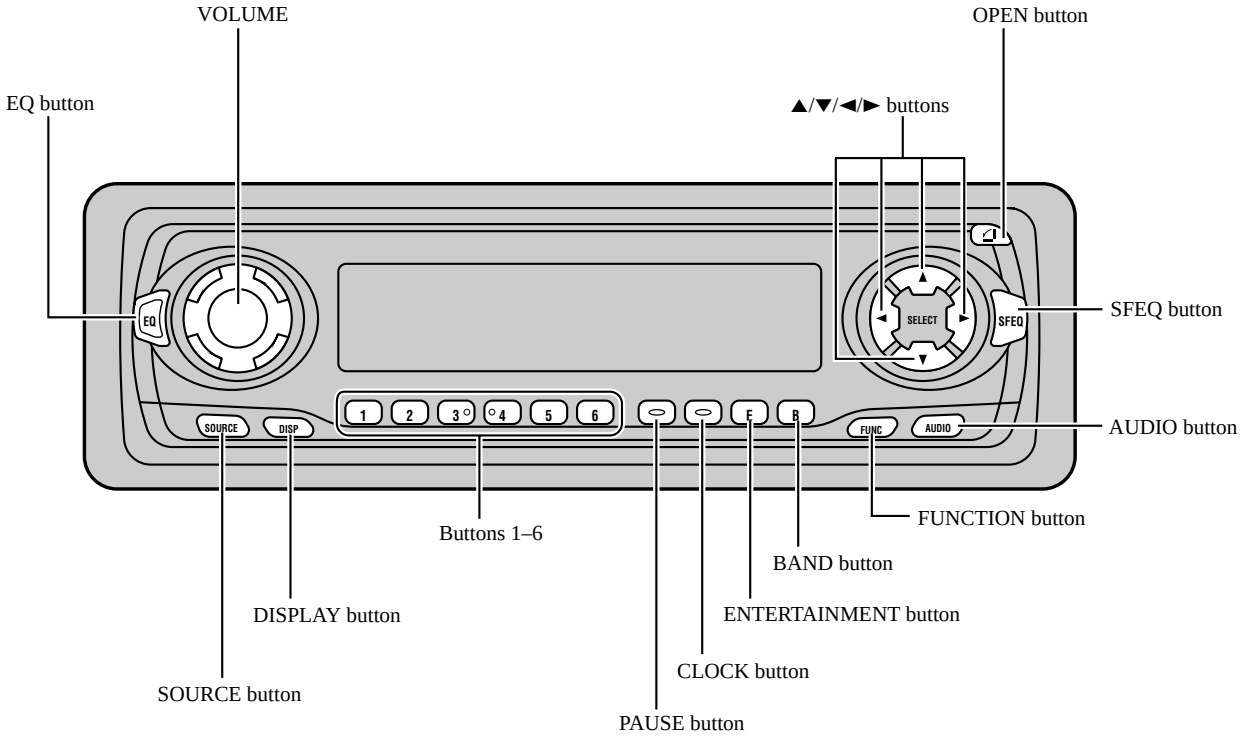


Completes power-on operation.
(After that, proceed to each source operation)

8. OPERATIONS AND SPECIFICATIONS

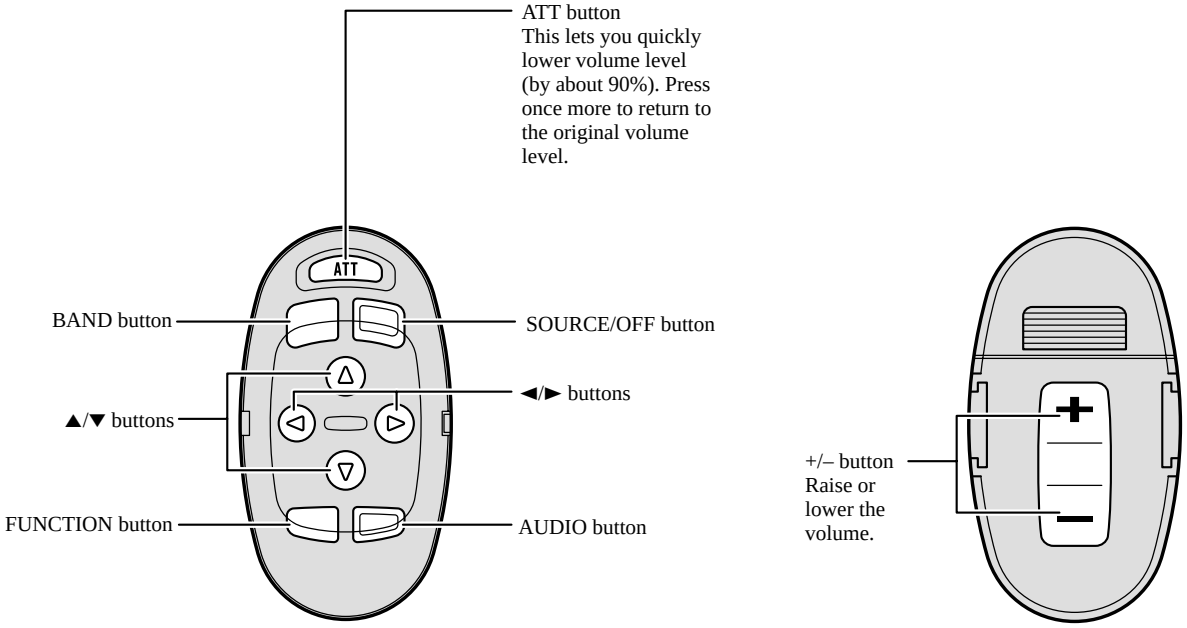
8.1 OPERATIONS

Head Unit



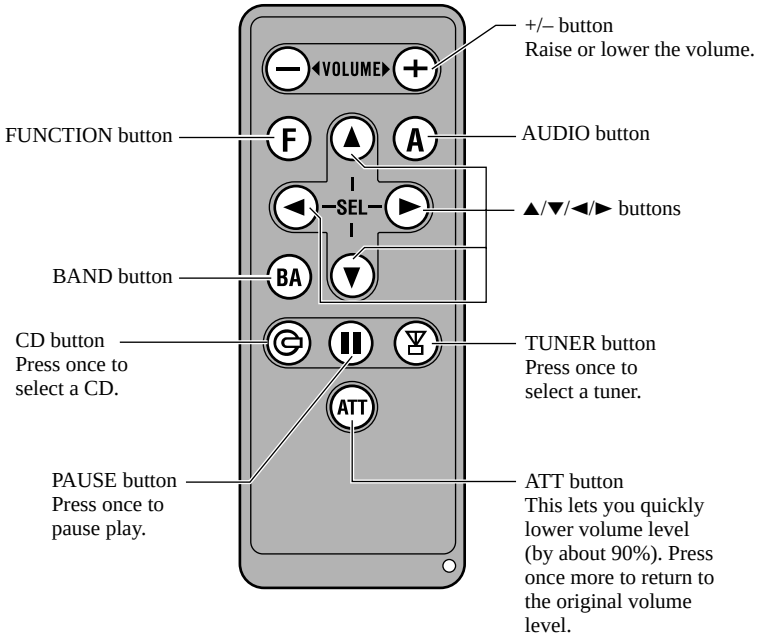
Steering Remote Controller (for DEH-P730)

A steering remote controller that enables remote operation of the head unit is supplied.
Operation is the same as when using buttons on the head unit.



Remote Controller (for DEH-P7300)

A remote controller that enables remote operation of the head unit is supplied.
Operation is the same as when using buttons on the head unit.

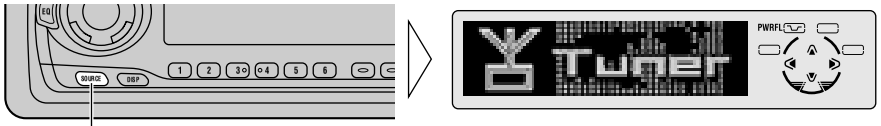


To Listen to Music

The following explains the initial operations required before you can listen to music.

Note:
- Loading a disc in this product.

1. Select the desired source (e.g. Tuner).



Each press changes the Source ...

■ Head Unit

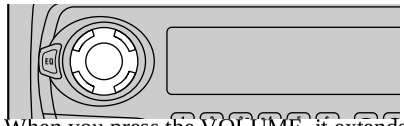
Each press of the SOURCE button selects the desired source in the following order:
Built-in CD player ➞ TV ➞ Tuner ➞ DAB (Digital Audio Broadcasting) Tuner ➞ Multi-CD player ➞ External Unit 1 ➞ External Unit 2 ➞ AUX ➞ Telephone standby

■ Remote Controller

Each press of the button selects the desired source in the following order:
TUNER button : TV ➞ Tuner ➞ DAB (Digital Audio Broadcasting) Tuner ➞ Sources OFF
CD button : Built-in CD player ➞ Multi-CD player ➞ Sources OFF

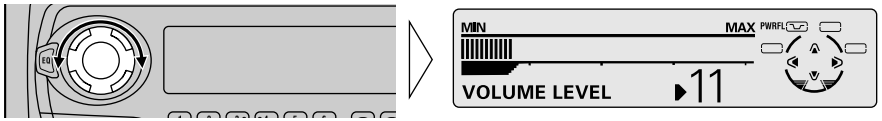
Note:
- External Unit refers to a Pioneer product (such as one available in the future) that, although incompatible as a source, enables control of basic functions by this product. Two External Units can be controlled by this product, although “External” is displayed whether you select External Unit 1 or External Unit 2. When two External Units are connected, the allocation of them to External Unit 1 or External Unit 2 is automatically set by this product.
- In the following cases, the sound source will not change:
  * When a product corresponding to each source is not connected to this product.
  * When no disc is set in this product.
  * When no magazine is set in the Multi-CD player.
  * When the AUX (external input) is set to OFF.
  * When the Telephone standby is set to OFF.
- When this product’s blue/white lead is connected to the car’s Auto-antenna relay control terminal, the car’s Auto-antenna extends when this product’s source is switched ON. To retract the antenna, switch the source OFF.

2. Extend the VOLUME forward.



When you press the VOLUME, it extends forward so that it becomes easier to roll. To retract the VOLUME, press it again.

3. Raise or lower the volume.



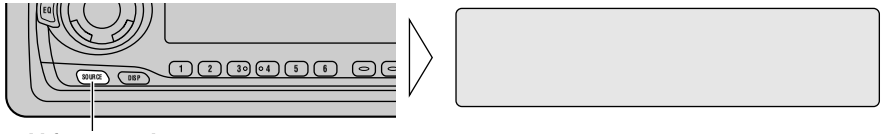
Rolling the VOLUME changes the volume level.

Note:
- Roll clockwise to raise the volume level.
- Roll counterclockwise to lower the volume level.
- Indications on the right side of the display differ depending on the model.

* DEH-P730:

ASL effect level (when ASL is switched ON).

4. Turn the source OFF.



Hold for 1 second

Basic Operation of Built-in CD Player

Note:
- Be sure to close the front panel after loading or ejecting a disc.

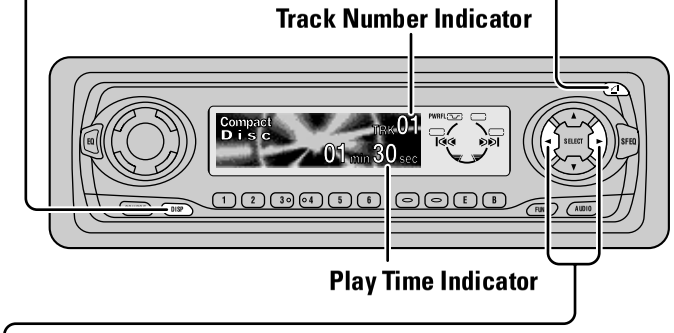
Switching the Display

Each press of the DISPLAY button changes the display in the following order:
Playback mode A (Play time) → Disc Title → Playback mode B (Play time and DAB Information)

Note:
- If you switch displays when disc titles have not been input, “NO TITLE” is displayed.
- When playing a CD TEXT disc, refer to “Title Display Switching” and “Title Scroll”.
- You can only switch to Playback mode B when a DAB Tuner (e.g. GEX-P700DAB) is connected.

Open

Note:
- Use to open the front panel when loading or ejecting a CD. (The illustration on the right shows the front panel open.)



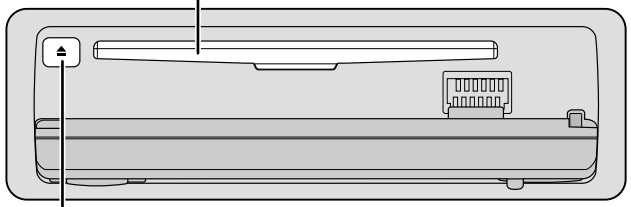
Track Search and Fast Forward/Reverse

- **You can select between Track Search or Fast Forward/Reverse by pressing the ◄/► button for a different length of time.**

Track Search	0.5 seconds or less
Fast Forward/Reverse	Continue pressing

Disc Loading Slot

Note:
- The Built-in CD player plays one standard 12 cm or 8 cm (single) CD at a time. Do not use an adapter when playing 8 cm CD.
- Do not insert anything other than a CD into the CD Loading Slot.



Eject

Precaution:
- To avoid a malfunction, make sure that no metal object comes into contact with the terminals when the front panel is open.

Note:
- The CD function can be turned ON/OFF with the disc remaining in this product.
- A disc left partially inserted after ejection may incur damage or fall out.

Note:
- If a disc cannot be inserted fully or playback fails, make sure the recorded side is down. Press the EJECT button and check the disc for damage before reinserting it.
- If the Built-in CD player cannot operate properly, an error message (such as “ERROR-14”) appears on the display.
- A CD TEXT disc is a CD featuring recorded text information such as Disc Title, Artist Name and Track Title.

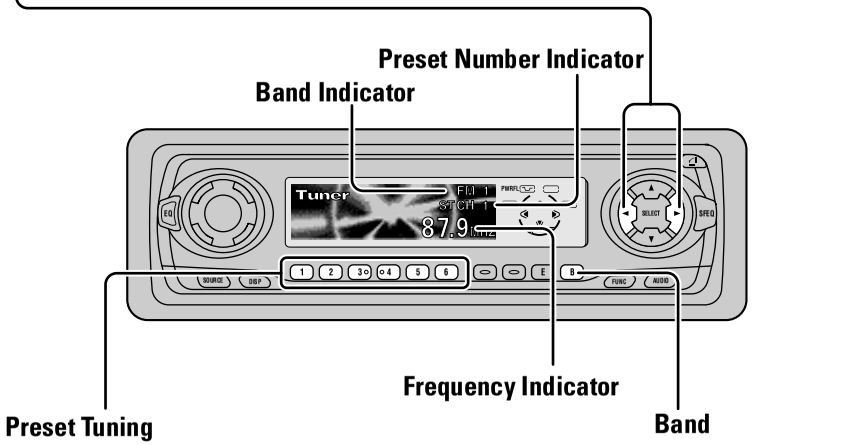
Basic Operation of Tuner

Manual and Seek Tuning

- **You can select the tuning method by changing the length of time you press the ◄/► button.**

Manual Tuning (step by step)	0.5 seconds or less
Seek Tuning	0.5 seconds or more

Note:
- If you continue pressing the button for longer than 0.5 seconds, you can skip broadcasting stations. Seek Tuning starts as soon as you release the button.
- Stereo indicator " **ST** " lights when a stereo station is selected.

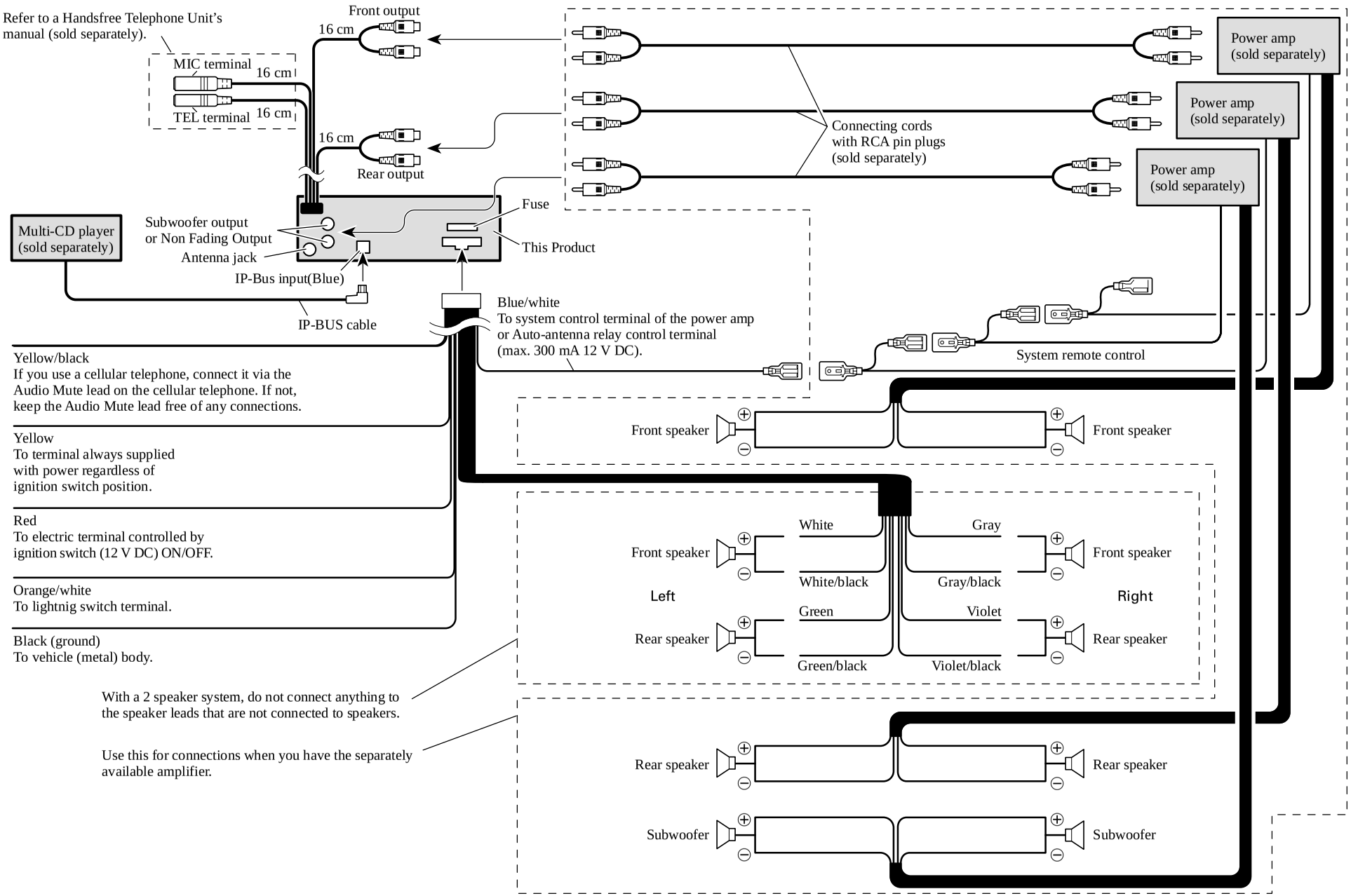


- **You can memorize broadcast stations in buttons 1 through 6 for easy, one-touch station recall.**

Preset station recall	2 seconds or less
Broadcast station preset memory	2 seconds or more

Note:
- Up to 18 FM stations (6 in FM 1, FM 2 and FM 3) and 6 AM stations can be stored in memory.
- You can also use the ▲ or ▼ buttons to recall broadcast stations memorized in buttons 1 through 6.

■ When not connecting a rear speaker lead to a Subwoofer



8.2 SPECIFICATIONS

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 10.0 A
Backup current ..... 5 mA or less
Dimensions
(DIN) (chassis) ..... 178 (W) × 50 (H) × 157 (D) mm
[7 (W) × 2 (H) × 6-1/8 (D) in]
(nose) ..... 188 (W) × 58 (H) × 19 (D) mm
[7-3/8 (W) × 2-1/4 (H) × 3/4 (D) in]
(D) (chassis) ..... 178 (W) × 50 (H) × 162 (D) mm
[7 (W) × 2 (H) × 6-3/8 (D) in]
(nose) ..... 170 (W) × 46 (H) × 14 (D) mm
[6-3/4 (W) × 1-3/4 (H) × 1/2 (D) in]
Weight ..... 1.4 kg

Amplifier

Continuous power output is 22 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output ..... 50 W × 4
50 W × 2 ch/4 Ω + 70 W × 1 ch/2 Ω (for Subwoofer)
Load impedance
..... 4 Ω (4 – 8 Ω [2 Ω for 1 ch] allowable)
Preout maximum output level/output impedance
..... 4.0 V/100 Ω
Equalizer (3-Band Parametric Equalizer)
(Low) ..... Frequency: 40/80/100/160 Hz
Q Factor: 0.35/0.59/0.95/1.15
(+6 dB when boosted)
Gain: ±12 dB
(Mid) ..... Frequency: 200/500/1k/2k Hz
Q Factor: 0.35/0.59/0.95/1.15
(+6 dB when boosted)
Gain: ±12 dB
(High) ..... Frequency: 3.15k/8k/10k/12.5k Hz
Q Factor: 0.35/0.59/0.95/1.15
(+6 dB when boosted)
Gain: ±12 dB
Loudness contour
(Low) ..... +3.5 dB (100 Hz), +3 dB (10 kHz)
(Mid) ..... +10 dB (100 Hz), +6.5 dB (10 kHz)
(High) ..... +11 dB (100 Hz), +11 dB (10 kHz)
(volume: –30 dB)
Tone controls
(Bass) ..... Frequency: 40/63/100/160 Hz
Gain: ±12 dB
(Treble) ..... Frequency: 2.5k/4k/6.3k/10k Hz
Gain: ±12 dB
HPF
Frequency ..... 50/80/125 Hz
Slope ..... –12 dB/oct.
Subwoofer output
Frequency ..... 50/80/125 Hz
Slope ..... –18 dB/oct.
Gain ..... ±12 dB
Phase ..... Normal/Reverse

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal format ..... Sampling frequency: 44.1 kHz
Number of quantization bits: 16; linear
Frequency characteristics ..... 5 – 20,000 Hz (±1 dB)
Signal-to-noise ratio ..... 94 dB (1 kHz) (IHF-A network)
Dynamic range ..... 92 dB (1 kHz)
Number of channels ..... 2 (stereo)

FM tuner

Frequency range ..... 87.9 – 107.9 MHz
Usable sensitivity ..... 9 dBf
(0.8 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 15 dBf
(1.5 µV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IHF-A network)
Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)
Selectivity ..... 70 dB (2ACA)
Three-signal intermodulation
(desired signal level) ..... 30 dBf
(two undesired signal level: 100 dBf)

AM tuner

Frequency range ..... 530 – 1,710 kHz (10 kHz)
Usable sensitivity ..... 18 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±10 kHz)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.